

# AMERICAN JOURNAL OF ARCHAEOLOGY



THE JOURNAL OF  
THE ARCHAEOLOGICAL INSTITUTE OF AMERICA  
PUBLISHED QUARTERLY BY THE INSTITUTE

JULY-SEPTEMBER 1934  
VOLUME XXXVIII. NUMBER 3

Printed by The Rumford Press, Concord, N. H.

# **GENERAL MEETING**

of the

## **ARCHAEOLOGICAL INSTITUTE OF AMERICA**

The Thirty-sixth General Meeting of the Archaeological Institute of America will be held in Toronto, Canada, December 27-29, 1934. The Annual Meeting of the Council will be held during this period.

Members of the Institute and others who wish to present papers at the meeting are requested to send the title and a brief résumé of their papers to Professor Clarence Ward, General Secretary, Archaeological Institute of America, Oberlin College, Oberlin, Ohio, before December 1.



## CONTENTS

ARCHAEOLOGICAL NOTES	329
IN THE LAND OF THE QUEEN OF SHEBA—Léon Legrain	329
ODYSSEUS AND ELPENOR ON A PELIKE IN BOSTON—Plates XXVI— XXVII—L. D. Caskey	339
NOTE ON THE MOSAIC OF DAPHNE	340
ASSYRIAN ELEMENTS IN THE PERSEUS-GORGON STORY—Clark Hopkins	341
HOW OLD IS THE GREEK ALPHABET—B. L. Ullman	359
METALLURGICAL FALLACIES IN ARCHAEOLOGICAL LITERATURE— Thomas T. Read	382
THE TWO CALLIAS DECREES—Allen B. West	390
THE DATE OF THE OLDER PARTHENON—William B. Dinsmoor	408
ARCHAEOLOGICAL NEWS AND DISCUSSIONS—David M. Robinson	449
EGYPT	449
THE ORIENT	449
CLASSICAL	451
AUSTRIA, RUSSIA AND SCANDINAVIA	463
UNITED STATES AND CENTRAL AMERICA	465
CHRISTIAN, BYZANTINE AND MEDIAEVAL	465
RENAISSANCE AND MODERN	466
NEWS ITEMS FROM ATHENS—Elizabeth Pierce Blegen	469
NEWS ITEMS FROM ROME—A. W. Van Buren	477
BOOK REVIEWS	491



## ARCHAEOLOGICAL NOTES

### IN THE LAND OF THE QUEEN OF SHEBA

A GOOD collection of Himyarite antiquities was acquired in 1931 by the Pennsylvania University Museum. The objects come from southern Arabia, a closed, inhospitable land, where no regular excavation has so far been possible. This miscellaneous collection of more than one hundred pieces includes: inscriptions in beautiful Himyarite characters, statuettes of men and of animals in copper and alabaster, plinths and stelae with bas-reliefs and inscriptions, small altars and incense burners, basins, cosmetic boxes, jars, saucers, paterae, a lamp support in bronze, necklaces of semiprecious stones,—in short the usual grave furniture, recovered by lucky find or clandestine excavation, in the high land between Hodeida and Sana'a, beyond Aden. From this harbor through private collectors and interested dealers, the objects have found their way to European and American museums.

The Museum collection gives us an opportunity to study at first hand the art of the Himyarites, which is not too well known, and which is not without importance for a larger understanding of the history of the Semites and of their religion. The very name, Himyarite, brings back at once the memory of the Queen of Sheba. The Himyarites are, indeed, the last independent Sabaean people of South Arabia. Himyar, after whom the Himyarite script, language and civilization are called, was the son of Yoktan, king of Yemen, which is the name of this South Arabian land protected by a desert coast and dangerous sea. The Himyarite kingdom was ruined before the Christian era by an invasion of the Persians, and later by the Ethiopians. The last stroke, which destroyed both language and religion, was dealt by northern neighbors, the Hedjaz Ismaelites, at the time of Mohammed and the birth of Islam. The old temples were ruined, the pagan cult was proscribed by the new zealots, even the old script was prohibited and replaced by the so-called Kufic characters invented by the learned scribes of Kufa on the Euphrates.

Shortly before the Christian era, the kings of Yemen claimed the title of kings of Sheba, or kings of Saba and of Dû-Raidân. About the same time the Greek Eratosthenes, back from a cruise along the coasts of the Red Sea, wrote his famous guide for the navigator, the *Periplus*. Greek merchants were interested in the traffic in gold and incense. One century earlier, the Romans following on land the same political line had seen their legions led by Aelius Gallus perish in the desert of sand. Better luck attended the Emperor Trajan in his expedition against the Nabataeans of Petra, who, close to the Dead Sea, were masters of the same traffic in gold and incense.

The rule of the kings of Sheba did not extend over the whole of South Arabia. Their power reached from Marib to the coast, over Sana'a and Dû-Raidân. Two centuries before the Christian era they were satisfied with the more modest title of Mukarrib. Small independent kingdoms, like that of Ausan, were to be found nearby. Besides Saba, the Romans knew three large autonomous provinces: Kataban and Hadhramaut on the eastern border, and towards the north in the interior, the most

mysterious and antique Minean kingdom. Its capital Ma'an, discovered by Halévy, a famous French scholar, still awaits the pick and spade of the digger.

King Sargon of Assyria knew the land of Sheba and Medina. King Tiglath-pileser received as a tribute from the kings of Babylon gold, pearls, spices, precious stones and rare woods. Each year the Arabs brought to King Darius a hundred talents of incense which the Chaldaean priests burned on the altar of Bêl of Babylon. The Hebrew Bible is our oldest witness. When the Queen of Sheba visited Solomon in Jerusalem, she brought him one hundred and twenty talents of gold, together with spices and precious stones in large quantity. No wonder that Solomon and his ally, King Hiram, were anxious to open at Eglon-Geber on the Red Sea a new center to keep up this profitable business with the South, in order to bring back from Ophir gold and precious woods. He liberated himself in this way from the toll levied on the caravans driving through Hedjaz, and he followed the political inspiration, which centuries before prompted the Pharaohs and the queens of Egypt in their expeditions to the land of Punt. In the patriarchal days Joseph was sold to a caravan of Ismaelites who carried spices, balm and laudanum from Gilead into Egypt.

The land of Sheba, the Arabia Felix of the Romans, was accordingly rich in natural products. It was also a land of transit on the highways from India and the Persian Gulf towards the Red Sea. East and west it borders on the two oldest civilizations of the world, Babylon and Egypt. Its natural position makes it the gate of Africa, where colonists from Yemen founded the great pagan kingdom of Ethiopia, planting there a Semitic civilization free from Mediterranean influence. Its merchants were rich, its kings played an important part, which when better known will form an interesting page in the history of the world. But in the last centuries scarcely twenty European travellers have been able to penetrate the interior of this country made inaccessible both by the intense heat of an arid climate and the fanaticism of semi-barbarous nomadic tribes always at war with one another and intolerant of all foreigners.

A survey of the collection now in the University Museum will make us more familiar with the stone and metal work of Sabaeen artists about the beginning of the Christian era. We may date the objects between 150 B.C. and 200 A.D. This is almost a certainty in the case of two votive inscriptions bearing a royal name. The rest will fit naturally round the historical pieces. They are funeral monuments, similar to the Palmyra busts and reliefs, and almost contemporary with them. They belong to the last period of the pagan, independent civilization of South Arabia, before the birth of Islam. The inscriptions are in the language—and the characters—of the south, the Sabaeen or Himyarite language, older and somewhat different from the Hedjaz dialects, and more closely connected with Hebrew and Ethiopian. We are chiefly interested, however, in the art forms adopted by the stone and metal workers of this distant province of the Semitic world. They betray the mixed influence of Egypt, Greece and Rome, a strange affinity with the art of the oldest Sumerian sculptors, and they foretell the African image carvers and their geometrical schemes, a source of inspiration to modern cubism.

The inscriptions need not delay us. One may admire the beauty of the Himyarite characters incised in the stone and marvel at the strange names of the kings of



FIG. 1 A.—STATUE OF AMMIRAM 'ABJAD KAR, IN ALABASTER



FIG. 1 B.—STATUETTE OF AMMAJADA OF SHUKAIM, IN ALABASTER

Sheba. But inscriptions may be left to scholars. Our eyes will judge the merit of the statues (Fig. 1). They are funerary images of the kings, princes, noblemen and merchants. They represent the deceased person, and were intended for his "double," a support for his soul, after the inanimate body had been buried in the grave. An individual portrait in the modern sense of the word is beyond the aim of the artist, and not required by oriental demands. In spite of the minute rendering of certain details such as joints, fingers, nails, beard and hair, of a painstaking imitation of the local costume and style, the artist's effort is subservient to an animist conception. It is enough for him to express in stone an image of life, even when that image is reduced to a simple mask, a mere symbol, two eyes, a nose, and a mouth. Our collec-



FIG. 2 A.—MASK OF KADDAT.  
LIMESTONE



FIG. 2 B.—MASK OF AMAN KALB  
LIMESTONE STELE

tion of twenty-two statuettes—the highest is about 50 cm. high—cut in alabaster, travertine, or compact limestone, runs through all the variations of sculpture in the round, or semi-round—the back being left rough—and simple bas-relief on the flat background of a stela. But always the ensemble is subordinate to the personal conception of the artist of what should be a picture of life. The head, or rather the mask, is the important part (Fig. 2), always cut on a very apparent geometrical plan, sometimes exaggerated to the point of foretelling modern cubism or more exactly African wood masks. To this is added a very oriental trait, which combines different materials, in an attempt at a closer imitation of nature. The eyes, for example, are painted or more often incrustated with pieces of shell cut in lozenge shape. Eyeballs are fragments of black obsidian. Eyelids and lips are in low relief or simply incised. Eyebrows may be painted, but are mostly formed of two deep incisions filled with bitumen. This trait, borrowed from an antique tradition of Sumerian stone carvers, establishes sufficiently the dependency of the schools of Saba on those of the Lower



Euphrates. The rendering of the hair is still more characteristic. It is generally cut straight over the forehead, left flat on the head, does not cover the ears, and is short over the neck. But it may also cover the neck in a heavy mass, after the Egyptian style, even in the case of men, and fall over the ears, so as to suggest an artificial wig, the use of which seems to have been known in Sumer and Egypt in the most remote times. This is true of the more refined and finished statuettes in the round. But in the case of statuettes in the semi-round, finished only in the front, the top and the sides of the head are left entirely rough. It is moreover noticeable, that besides being cut



FIG. 3 A.—STATUETTE OF BAHATIM



FIG. 3 B.—SEATED FIGURE

straight above, the forehead is marked with a black line descending on the temples, which leads one to believe that the hair was a bitumen wig. Here again we find a close relation with the style of the prehistoric clay figurines of Sumer. Beard and moustache are frankly cut after the Sabaeen fashion. The beard extends from one ear to the other in necklace shape, framing the chin and with the lower lip left smooth and clean shaven. The moustache, a prized adornment of Semitic faces, is for the Sumerian an unknown luxury. The hair finely traced on the best statuettes is often expeditely replaced by stippled lines. Several entirely smooth faces may belong to very young men. But other heads in the round and entirely shaven are so close to Sumerian tradition that they apparently represent merchants from southern Mesopotamia as is suggested by the short necks, high cheek bones, heavy cheeks,

round foreheads and ears attached far back. Racial traits outweigh the usual geometrical plan.

The body of the statuettes is as a rule somewhat negligently cut and even in the best examples is out of scale (Fig. 3). It is often grotesquely disproportionate, unless we take the Sabaean for a race of dwarfs or very short men. The fact is that the best modelled body has in the eyes of the artist only a secondary importance as a support of the head or mask, a conception far removed from the Greek canon of rhythmic forms. Here again we are reminded that some statues of the Sumerian Gudea present the same contrast between a finely modelled head resting on a grotesque short body. Sabaean sculptors were not shocked by such a convention, nor did Egyptians and Sumerians hesitate to unite face and profile. Sometimes, however, the body is

scarcely more than outlined in a poorly carved block, or reduced to elementary parts, like two huge hands without the arms, two unbelievably virile nipples, stiff legs and arms such as would grace a wooden puppet. We have returned to the primitive baetyl surmounted by a human head. Finally the body disappears entirely, the funeral monument being reduced to a human mask of triangular shape, or an animal head, a symbol, on the smooth background of the stela, or a bare slab of stone with one name engraved (Fig. 4).



FIG. 4.—STELA OF YI HRAM IL.  
DIR. ALABASTER

The conventional attitude of our statuettes and the geometrical style of the masks are derived from an Oriental technique. They are not devoid of character and even of a certain grace, both grave and formal. The deceased person stands firmly on his two feet here and in Sumer, while in Egypt he puts one foot forward as if marching. The Sabaean is erect, the elbows against the body, the hands extended before him, the palms facing each other. It is the gesture of presentation or welcome. More often the left hand is closed, pierced through, holding a sceptre, the staff of the dignitary, which

may have been a copper rod, as we deduce from the traces of verdigris. The man wears a loin cloth reaching to the knees, closed in front and tied with a belt, or a tunic leaving arms and neck free. More refined royal statues add a fringe to the loin cloth, the usual garment worn at home. Or the ruler has adopted the Graeco-Roman fashion and wears a pleated tunic and a draped peplos. The Sabaean man wears ornaments like necklaces of one or several strings, bracelets, armlets, anklets, and perhaps a diadem about the forehead. This taste for adornment cannot surprise us among Orientals. Statuettes with a complete headdress are too rare to allow any definite conclusions, but masses of hair or long tresses falling over the shoulders belong to the virile, or at least the royal style.

We need not insist on the obvious geometrical style of heads and masks (Fig. 5). It is enough to notice that the face has two planes, a superior plane reserved for the forehead, nose and high brows, and an inferior one where the lozenge shaped eyes



and mouth are cut in slight relief or incised. Lines of black paint and red colored eyeballs add life to the face. The mouth is usually small with thin lips, but may also be thick and sensual. The chin is short, firm and rounded. The nose is often long and straight, but in certain types fleshy and curved.

The statuettes belong to the class of funerary monuments placed in niches and seen only from the front. The lower part of the feet or of the inscribed plinth is left rough. Sides and back are scarcely modelled, with long furrows briefly outlining elbows, hips, the hollow of the back, and the calves. The two feet are on the same line, sometimes not completely disengaged from the block. The legs are short, the shoulders too broad and the neck too large. The trunk is a rectangular block, poorly shaped, mainly as a support of the triangular head or mask, intended by the artist as an effigy of the deceased. The solemn pose is emphasized by the ritual gesture of the two extended hands. The dead is standing or seated, and has no use for the soft couches of Greek banquets.

The *incense burners* are generally little cubic troughs of limestone on four feet with rings, and inscribed on the four faces with the name of the owner, or of aromatic plants: reed, aloe, nard, myrrh or incense (Fig. 6). Some others cut in alabaster have curious forms and are richly decorated. They may be miniature copies of real altars used for burning incense in the Sabaeen shrines. One is adorned with ten gazelle heads or bucrania between two constructions, houses with doors and windows. The second is a massive table with projecting horns.

All over the East the black khol or stibium was used for eyes; also green malachite, blue turquoise powder, or red hematite. Among the small objects found in the graves are several rectangular plaques in alabaster with twin circular compartments for two kinds of cosmetics. They are decorated with incised lines and lion's heads, and probably had a flat alabaster lid, tied to a hole in the thin partition. Small, footed cups—strangely resembling a Roman chalice—had the same destination. They are again divided by a thin partition into two compartments, with a hole bored on the side for the pivot of the lid. Other cups rest on three feet, and are also decorated with circular and vertical lines, and a lion head in relief. They served to crush and



FIG. 5.—HEAD OF A WOMAN IN ALABASTER

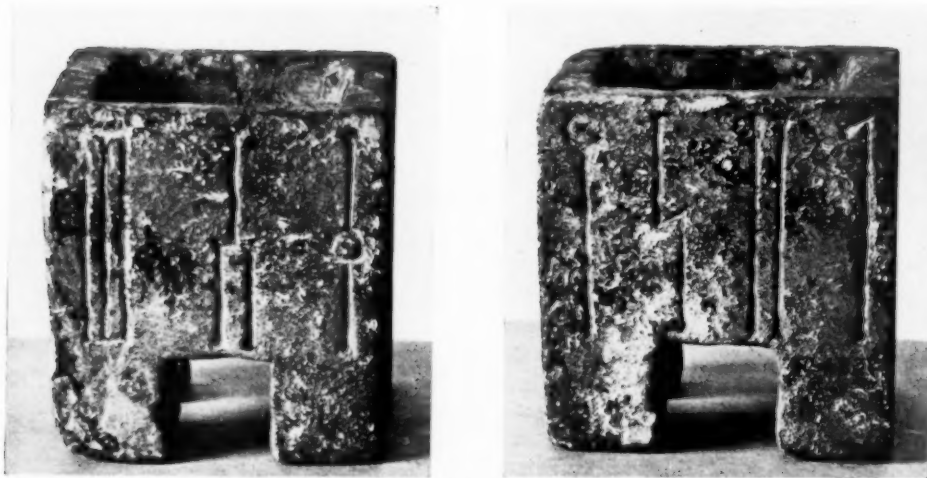


FIG. 6.—INCENSE BURNER OF LIMESTONE



FIG. 7.—ALABASTER SAUCER



FIG. 8.—JAR OF ALABASTER WITH A MONOGRAM

mix powders and cosmetics. Sometimes the name of the owner is engraved in stippled lines.

*The paterae* are small alabaster plates like saucers and bear engraved on the flat rim the name of the owner (Fig. 7). We may fancy them filled with fruits and nuts and placed near his hand.

*Jars* are often cut in alabaster, of conical, solid, shell-like form and are fairly elegant. In them were probably stored the liquid perfumes or the olive oil intended for the toilet of the dead. Their massive lids cut in alabaster, fitting over the mouth of the jar, are adorned with a lion head or a small crouched lion. This knob is usually perforated, as also two lion heads on the side, the whole probably tied with a string and sealed (Fig. 8).

Metal objects are generally badly preserved. The copper incense burners copy the stone ones of circular or cubic form, resting on one, three or four feet. The feet are in the form of a bull's hoof. Lines in relief or fringes adorn the outside, also crescent, star and snake-like lines. A small crouched bull on a square plaque, with more than a hundred short points on the reverse, may be a scraping instrument for toilet use (Fig. 9). A rare copper statuette of a horse may be a votive offering. A metal band—now missing—bore probably in relief the name of the owner. A better preserved example is now in Constantinople. The body cast hollow is filled with bitumen. A bell hangs from a rope around the neck. Our last piece is an elegant lamp support in the form of a bow. The main stay was a shaft passing arrow-like through the middle. The terminals are bull's heads over rings from which hung the lamps.

The necklaces had the usual Oriental beads: agate, carnelian, jadeite, glass and paste (Fig. 10).

The graves in the land of Sheba, like those of Egypt and Babylon, supply us with our best information about the living. They preserve for us the objects which were dear to them, and which they wished to take with them to their abode in eternity.

LÉON LEGRAIN

UNIVERSITY MUSEUM  
PHILADELPHIA



FIG. 9.—SCRAPER FOR TOILET USE. COPPER



FIG. 10.—NECKLACE

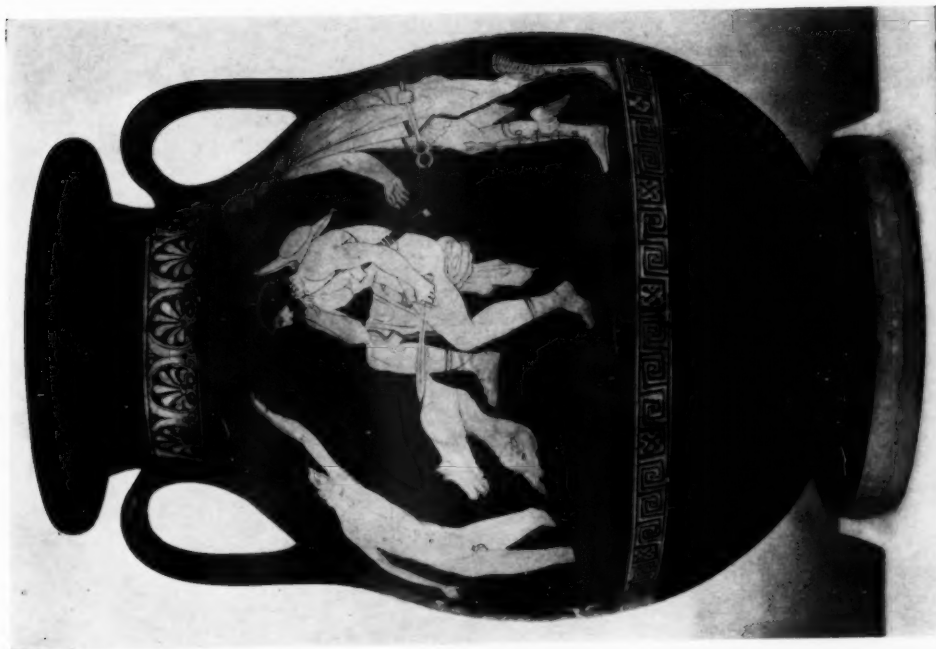


PLATE XXVI.—PELIKE IN THE BOSTON MUSEUM OF FINE ARTS



PLATE XXVII.—ODYSSEUS AND ELPENOR ON THE BOSTON PELIKE



## ODYSSEUS AND ELPENOR ON A PELIKE IN BOSTON

### PLATES XXVI-XXVII

Νῶϊ μὲν ὥς ἐπέεσσιν ἀμειβομένῳ στυγεροῖσιν  
ἤμεθ', ἐγὼ μὲν ἀνευθεν ἐφ' αἵματι φάσγανον ἴσχων,  
εἰδῶλον δ' ἐτέρωθεν ἐταίρου πολλ' ἀγόρευεν.

THESE lines from the *Nekyia* of the *Odyssey* (XI, 81-3) must have been clearly in the mind of the vase painter who drew the remarkable picture here reproduced. In the centre, Odysseus (ΟΔΥΣΕΥΣ), seated on rocky ground with his chin resting on his right hand, gazes sorrowfully into the staring eyes of his comrade. His left hand holds the sword with which he has cut the throats of the two sheep lying before him; their blood drips into the pit prepared for the purpose. The ghost of Elpenor (ΕΛΠΕΝΟΡΟΣ), whose legs from the knees down are hidden in a depression of the ground, leans his body and raised left arm against a rock, the hand grasping a projection from it, while his right hand, planted on another rock, gives him the additional support he needs to hold himself erect. One is reminded of the epithet *ἀμενηνὰ κάρηνα*, and of the description of Agamemnon later on in the story (II. 393-4):

ἀλλ' οὐ γάρ οἱ ἔτ' ἦν ἰς ἔμπεδος οὐδὲ τι κῆρυς,  
οἷη περ πάρος ἔσκεν ἐνὶ γναμπτοῖσι μέλεσσι.

The rendering of the landscape shows the artist's familiarity with Circe's description of the entrance to the Lower World (X, 513-5):

Ἐνθα μὲν εἰς Ἀχέροντα Πυριφλεγέθων τε ρέουσι  
Κώκυτός θ', ὃς δὴ Στυγὸς ὕδατός ἐστιν ἀπορρώξ,  
πέτρῃ τε ξύνεσις τε δὺν ποταμῶν ἐριδούπων·

The reeds suggest the proximity of the rivers. And the rock at their confluence is represented by the undulating line against which Elpenor leans.

Hermes (ΗΚΕΡΜΟ), who stands behind Odysseus, plays no part in this episode of the *Odyssey*. The artist may have added him because of his connection, as *Psychopompos*, with the Lower World. It is possible also that the god appeared in one of the lost tragedies dealing with this theme.

The picture decorates the front of an Attic red-figured pelike acquired recently by the Museum of Fine Arts, Boston.<sup>1</sup> It is nearly nineteen inches high (0.474 m.), with a capacity of six gallons. The background of the figures measures ten inches between the upper and lower borders. The vase is unbroken, except at the lip. The inscriptions, the contours of the rocky landscape, the reeds behind Elpenor and the pit with the blood of the sheep dripping into it were executed in a thick yellowish-

<sup>1</sup> An account of it has been given in the *Bulletin of the Museum*, XXXIII, June, 1934, pp. 40-44; and it will be more fully published in the second part of *Attic Vase Paintings in the Museum of Fine Arts*.

white pigment. This has flaked off save for one small fragment; but it is still possible to make out all the details, since the surface they covered is without lustre.

The reverse of the vase shows Poseidon pursuing Amymone, while one of her sisters runs away in terror,—a stock subject competently drawn, but of no particular interest.

The artist is the Lykaon painter, as Professor Beazley recognized two years ago.<sup>1</sup> In addition to its interest as an illustration of a famous passage in the *Odyssey*, the Underworld picture must be ranked with the finest Attic vase paintings of the classical style of about 440 B.C.

L. D. CASKEY

MUSEUM OF FINE ARTS, BOSTON

<sup>1</sup> The same attribution has since been made independently by Miss Richter.

### NOTE ON THE MOSAIC OF DAPHNE

IN the preliminary description of the excavations at Antioch, which Professor W. A. Campbell recently published in this *JOURNAL* (XXXVIII, 201-6), the account of the wonderful mosaic found at Daphne is sure to make a special appeal to all lovers of ancient art; and the remarkable border representing prominent buildings in the city is of extraordinary importance.<sup>1</sup> In connection with it I venture to offer a suggestion. The label of the building mentioned by the reporter as "the villa of Ardaburius" (ΤΟ ΠΡΙΒΑΤΟΝ ΑΡΔΑΒΟΥΡΙΟΥ) means, I think, "the bath of Ardaburius." It is quite true that *πριβάτον* (*privatum*) could mean a personal estate, a villa; but in the fifth century we find evidence that it was applied particularly to baths established and managed by private enterprise as opposed to public baths (*δημόσια*). We find the word so employed in the apocryphal Acts of John attributed to Prochorus (Zahn's edition, p. 15, 2, 10-11; index, p. 255), a work which its editor believes to have been written in Syria about 500 A.D. (Zahn, introduction, p. lx). It also occurs in this sense in Pap. Flor. 384 (saec. v ?), 6, 11, 39, 77. I have called attention to this peculiar use of the word in a paper in *Studies Presented to F. Ll. Griffith*, 1932, p. 204.

This interpretation is made somewhat more probable by the word ΚΑΤΑΛΙΑ which occurs in the same label to the right of the other words (Pl. XXII A). Such a name would be specially appropriate to an elegant bath establishment. The elliptical contour seen to the right of the façade of the building would then represent the end of a *piscina* or *κολυμβήθρα* to which the name Kastalia may have belonged in particular.

CAMPBELL BONNER

UNIVERSITY OF MICHIGAN

<sup>1</sup> See now *Antioch-on-the-Orontes: The Excavations of 1932*, Princeton, 1934, pp. 129-132, where the mosaic is discussed by J. Lassus. The volume appeared after the note above was written.



## ASSYRIAN ELEMENTS IN THE PERSEUS-GORGON STORY

THERE are several references to the Gorgon in Homer though, as Furtwängler<sup>1</sup> points out, representations of the monster in art do not occur until after the Geometric period. In the *Iliad*, Athena is represented (V, 738 ff) as throwing about her shoulders the tasselled aegis circled with Fear, and adorned with Strife, Courage, chill Rout and the Gorgon head of the terrible monster (*ἐν δὲ τε Γοργείῃ κεφαλῇ δεινοῦ πελώρου — δεινὴ τε σμερδὴν τε, Διὸς τέρας αἰγυόχοιο*). A somewhat similar representation was in the mind of the poet when he described the shield of Agamemnon with Terror and Fear apparently circling the head of the Gorgon (*τῇ δ' ἐπὶ μὲν Γοργῶ βλοσυρῶπις — δεινὸν δερκομένη, περὶ δὲ Δεῖμός τε Φόβος τε ἐστεφάνωτο*, XI, 36). The terrifying glance of Hector is once compared to that of the Gorgon or man-slaying Ares (*Γοργοῦς ὄμματ' ἔχων ἥδ' ἐβροτολοιγού Ἄρης*, VIII, 349). In the *Odyssey* the mere thought of the Gorgon head is enough to furnish Odysseus with a chill of fear. "And cold terror seized me," he says, "lest revered Persephone send up from Hades the Gorgon — head of the terrible monster." (*ἐμὲ δὲ χλωρόν δέος ἤρει — μή μοι Γοργεῖην κεφαλὴν δεινοῦ πελώρου — ἐξ Ἀΐδος πέμψειεν ἀγανὴ Περσεφόνη*, XI, 633).

One remarks at once that in all four of these passages it is the glance or look of the Gorgon which seems of special significance; and that no attention is paid to the body. Twice the head alone is referred to explicitly, once it is merely the eyes; on the shield of Agamemnon an adjective for the face alone is given, the glance is stressed, the representation is circled with the figures of Terror and Fear. Certainly here again we have only the head so often represented on shields of later warriors. In addition to the emphasis thrown on the head alone, we learn from these references that it belonged to a terrible monster, that the eye or the glance was the most terrifying feature, that the face was already portrayed on the Aegis of Athena and acknowledged to be a sign of Zeus who also bore the aegis. It has been well remarked in this connection that the representation of the head is certainly considered to be always full front for only so would the power of eyes and glance be adequately given. Curiously enough from the name Gorgo itself, our only other evidence in this early period, we have the emphasis thrown on another feature, the voice, for it is with the Sanscrit "garj" to shriek, and the Greek *θόρυβος* that the root is usually connected. This seems the more strange when we consider that in Greek literature generally, though the Gorgon's sisters may shriek in pursuing Perseus, from the most famous of the three we hear no sound. She does not appear in story until she is attacked by Perseus. The sleep in which he finds her is only broken by death.

It is no doubt the vagueness of these first references and the great difficulty of linking them all together into one satisfactory whole that has led to so many different theories of the origin of the Gorgon. Ziegler in *Pauly-Wissowa* (VII, pp. 1645 ff.) gives an excellent summary of the hypotheses advanced before 1912: the various attempts to see the original Medusa in such natural phenomena as volcanic eruption, the ocean's roar, the sea waves, etc., the connection of the Medusa-head with

<sup>1</sup> Roscher's *Lexicon*, pp. 1695-1727.

the ghost-like character of the full moon, first developed by Gädechens; Roscher's famous theory of the Gorgons as thunder-clouds; the theory of Ridgeway, which Miss Harrison follows, that the Gorgoneion was the actual head of a hideous beast indigenous to the Libyan desert; and K. O. Müller's hypothesis that the Gorgon figure was the personification of an idea in which the chief elements were anger, rage and scorn. We might smile now at the hypotheses which saw the original Medusa in the ape, the gorilla or the countenance of the octopus, were it not for the fact that most recently a scholar armed with the modern weapon of psychology has advanced the vision of a nightmare as the prototype of the Gorgon head.<sup>1</sup> Dreams, however, are based at least in part on fact and it would not be difficult for the older adherents of the zoölogical origin to reassert their theory with the dream as medium between the terrifying appearance of octopus or gorilla and Gorgon head.

We may for convenience divide these theories into two groups, one seeking the origin of the Gorgon in natural phenomena, the other in actual zoölogical specimens or in animals of the imagination derived from these. When from these hypotheses, however, we glance back to the evidence of Homer, difficulties are at once apparent. Why should only the head of an animal be portrayed, and never a mention made of arms or claws? How did such an animal obtain the human head? Why should it be especially connected with Athena and Zeus? Finally in its connection with these divinities why is it only the head, never the Gorgon as a whole which is mentioned? Practically the same objections may be made to the origin in natural phenomena. Zeus to be sure is connected with the storm but why should Athena so constantly wear the Gorgon's head and so little employ the thunderbolt? Why in this particular case should the Greeks depart from their usual habit of depicting nature gods as full grown beings and portray only the head? Is it not most curious that whether the Gorgon head was originally volcano, or storm cloud, or roaring sea, it should possess in Homer only a head, apparently, moreover, so inanimate a thing as a head severed from the body? And is it not curious that the severed head of a terrible enemy should be used for protection and defence by Athena and Zeus?

Under this battery of questions it is perhaps easier to adopt the recent solution of Nilsson who follows Hartland<sup>2</sup> in relegating the whole story to the category of folk-tale the origin of which is lost in the indefinite past. Speaking of the Perseus-Gorgon story Nilsson says,<sup>3</sup> "The most prominent hero of Mycenae in the earlier generation is Perseus. The kernel of his myth is the slaying of the monster Gorgo, and is perhaps the best instance of a folk-tale received into Greek heroic mythology." On the same page he explains the more definite details added by the Greeks. "The myth of Perseus," he writes, "is unusually crowded with folk-tale motifs and this is in some measure a proof of high antiquity. Folk-tales are told in all countries everywhere and they are not localized by other peoples. In Greece, however, they were localized because of the innate tendency of heroic mythology to localize its heroes, and because the folk-tale was preserved only when it was received into the

<sup>1</sup> H. J. Rose, *A Handbook of Greek Mythology*, London 1928, pp. 29-30.

<sup>2</sup> E. S. Hartland, *The Legend of Perseus*, I-III 1894-6.

<sup>3</sup> M. P. Nilsson, *The Mycenaean Origin of Greek Mythology*, University of California Press, 1932, p. 40.

heroic mythology." On the one hand, however, this explanation only avoids the question of origin by throwing it further back into the past, and on the other hand offers no reason why a certain folk tale should be attached to a certain hero at a particular time. Nor does it seek to explain the development and changes in the Gorgon itself or the Perseus-Gorgon story as a whole. One is therefore rather challenged by these hypotheses to review the question afresh, than to rest satisfied with such solutions.

Nor can we accept unreservedly the opinion that the Perseus-Gorgon story was already known in Mycenaean times because the Gorgon was known to Homer, Perseus was recognized as a hero by the poet, and because the fabric of the Gorgon-slaying episode is perhaps very old and widespread. Homer, as we have seen, mentions the Gorgon four times; he mentions the name of Perseus three times, twice when he merely calls Sthenelos Perseus' son (Περσηϊάδης, *Il.*, XIX, 116 and 123); once when Zeus relates to Hera in that extremely doubtful passage the love he once had for Danae, "who bore Perseus, outstanding among heroes." (ἡ τέκε Περσῆα, πάντων ἀριδείκετον ἀνδρῶν, *Il.*, XIV, 319). In view of the later great popularity of the Perseus-Gorgon story it seems at least curious that Homer would not mention the incident if it were either current in his own day or a tradition handed down from Mycenaean times.

The theory that it was the Gorgon's head, not the Perseus-Gorgon story that was foremost, at first seems borne out by the evidence of the representations in art. To be sure we have no representations at all in the Mycenaean or geometric periods, but the first representations we have depict the head alone. Payne in his excellent treatise on Corinthian pottery gives an analysis of the development of Gorgon types.<sup>1</sup> The first of the series goes back and far back, he says, into the Protocorinthian period, certainly to the time before the middle of the seventh century B.C. This is the representation of a Gorgon's head on the back of a lion protome. The handle ornament of Gorgon head on the Macmillan lekythos and the shield device of Gorgon on the aryballos from Gela both date from the middle of the seventh century. A second shield device on the Chigi oinochoe is slightly later. It is not until we come to the Thermon metopes dating perhaps from the transitional period 640/35—620/15 that we see either the complete figure of the Gorgon or any representation of Perseus and the Gorgon together.

When the Thermon metopes were painted, however, the whole story of the slaying by Perseus was known, for one of the metopes portrayed a Gorgon in pursuit of Perseus.<sup>2</sup> A clay plaque from Syracuse of almost the same period portrays the kneeling Gorgon with the winged Pegasus under her arm. It is, as Payne remarks, on Corinthian paintings of the kind represented at Thermon that the brilliant description of the pursuit of Perseus by the Gorgon is clearly based.<sup>3</sup> From Hesiod we have not only the story of the slaying of the Gorgon by Perseus but also the account of the birth of Chrysaor and Pegasus from the neck of the slain monster.<sup>4</sup>

Yet this transition from the head alone, as given in the early art and story, to the

<sup>1</sup> Humfry Payne, *Necrocorinthia*, Oxford 1931, p. 80.

<sup>2</sup> *Antike Denkmäler*, 11, pl. 52; Payne *B.S.A.* 1925-6, p. 127.

<sup>3</sup> Pseudo-Hesiod, *Shield of Herakles*, 216 ff.

<sup>4</sup> Hesiod, *Theogonia*, 280-1.

figure of the monster suggested by Hesiod, and depicted so often in Corinthian and later Greek art types, appears to have been by no means simple. Proof of this in ancient times is afforded by the many different representations of the Gorgon's body in the seventh century, and at present by the startling differences of opinion among modern scholars about the origin of the Gorgon type, due certainly to these varying interpretations in early art. On the famous plate from Kamiros, the Gorgon's head is apparently placed on the shoulders of the nature-goddess of Asia Minor;<sup>1</sup> the late geometric vase from Boeotia represented the Gorgon as a centaur.<sup>2</sup> Many and various are the fantastic Gorgon types from Italy. The heads themselves in this early period are sometimes bearded, sometimes not. Some representations have horns or beast ears, some neither. The snakes apparently are a later development appearing first in the Thermon metope.

Furtwängler explained the early bearded Gorgon heads as a logical development from an originally male demon-mask. Frothingham in 1911 advanced the theory, based on the interpretation of the Kamiros plate, that the Gorgon is to be identified with a form of the great mother goddess of Asia Minor, especially Artemis.<sup>3</sup> Most common at present is the belief that the type arose in Syria or Cyprus influenced by Egyptian representations of the god Bes. Six<sup>4</sup> believed the Greek form originated in Cyprus from Phoenician models of an originally Egyptian type. Furtwängler (Roscher's *Lexicon*, Vol. III, 2, pp. 1986 ff.) distinguishes two principal Greek forms, one arising from Hittite art types in Asia Minor, the other from Phoenician adaptations of Egyptian Bes. More recently, however, Pettazzoni following Ohnefalsch-Richter has sought to trace the origins back to the representations of the Egyptian goddess Hathor,<sup>5</sup> while the claims of Asia Minor especially for the origin of the kneeling type of Medusa found on the Corfu pediment are supported by Eduard Meyer in his volume on the Hittites.<sup>6</sup> Payne believes that though the Egyptian or Syrian origin of the Gorgon figure is a possibility, the representations should be considered as a Greek invention since through Greek artists the Gorgon received an entirely individual character.<sup>7</sup>

It seems perfectly clear from so many original variations allowing such wide differences in interpretation, that there had been in the seventh century no commonly recognized form of the story in legend and art. To account for this fact there can, I believe, be only one explanation, a solution furnished by the evidence of Homer and the earliest representations in art. In the earliest period, the Mycenaean age, and the geometric epoch, the head alone of the Gorgon monster was known both in story and in art. In the seventh century, therefore, when artists began to attempt the whole body they were free to fasten the head on any type of body they preferred, and they used this freedom with eagerness. Later on the Corinthian types were recognized as the best interpretations and these were then universally adopted.

<sup>1</sup> *J.H.S.* VI, 1885, pp. 278 ff.

<sup>2</sup> *B.C.H.* XXII, 1898, Pl. 5.

<sup>3</sup> *A.J.A.* XV, 1911, pp. 349 ff.

<sup>4</sup> J. Six, *De Gorgone*, 1885, p. 94.

<sup>5</sup> Ohnefalsch-Richter, *L'Imagerie phénicienne et la mythologie iconologique chez les Grecs*, pp. 128 ff; Raffaele Pettazzoni, *Bollettino d'Arte*, Serie II, 1, 1921-22, pp. 491 ff; cf. Alda Levi, *Bollettino d'Arte*, Serie II, V, 1925-6, pp. 124 ff.

<sup>6</sup> E. Meyer, *Reich und Kultur der Chetiter*, Berlin 1914, Fig. 83, pp. 113-14 and notes.

<sup>7</sup> H. Payne, *Necrocorinthia*, Oxford 1931, pp. 79 ff.



If our reasoning is correct, therefore, we may conclude that before the seventh century only the head of the Gorgon was known, that during the last half of that century the body was first represented and the story of the slaying of the Gorgon by Perseus first introduced. One suspects that some new influence, a force from outside, must have contributed to cause the sudden and immense popularity of this famous tale.

In the seventh century the Assyrian Empire was dominant in the East. Assyrian influence was, however, no new feature in western Asia, for ever since the great Ashurnasirpal's reign in the first half of the ninth century, Assyria had had no great rival in the East and generally controlled the western countries of Palestine and Syria. If the Assyrian forces had not come into direct contact with the Greeks before, through their enterprises in Phoenicia and Cyprus, at least the two peoples met when Sennacherib invaded Cilicia in 698 B.C. It was, however, under the great Ashurbanipal, 669-26, that Assyria seemed to reach the apex of its strength and prosperity. Egypt was prostrate; other eastern powers except Elam were unable to offer resistance and Elam herself was about to capitulate. Still more interesting it is to see that just at this time, during the reign of Ashurbanipal, Assyrian art advances with great strides and for the first time exerts a direct and powerful influence on the Greek artistic development. The technique which Assyrian artists possessed in the portrayal of animal forms, as exhibited in the marvellous reliefs of lions and wild horses from the palace of Ashurbanipal, has rarely if ever been excelled. But it is just characteristic features of this new style which appear now for the first time and with sudden prominence in Greek drawings. It was pointed out some time ago that the change in horse representations as exhibited on Corinthian vessels can be traced back to the new Assyrian movement.<sup>1</sup> The solid incised rosette, "hall-mark" of the early Corinthian orientalizing style in the last quarter of the seventh century, is a design most common on Assyrian dress patterns. Payne traces the influence further, citing the new and favorite Corinthian floral complex which develops from an Assyrian motive, and the introduction of four-winged monsters common in Assyrian art.<sup>2</sup> Particularly striking is the change at this time of Greek lion types for it reflects the difference between the Assyrian and the Hittite. "It is scarcely an exaggeration to say," Payne declares, "that wherever the Corinthian type shows an advance on the Protocorinthian, it reflects the progress of the Assyrian type beyond the Hittite."

It can be then, I believe, no mere coincidence that Assyrian art brings us a demon resembling the Greek Gorgon much more closely in many respects than does the Egyptian Bes, and Assyrian tradition a most striking parallel to the Perseus-Gorgon story. This is, of course, the figure of Humbaba and the story of his death at the hands of Gilgamesh. Eduard Meyer<sup>3</sup> remarks that he knows of only two figures besides the Gorgon in ancient art, which are regularly portrayed full face: Gilgamesh with related figures in Babylonian art, and the Egyptian god Bes. He overlooks the fact, however, that Humbaba is not only never represented except full-

<sup>1</sup> Lierens u. Wilchau, *Zur Pferdedarstellung*, p. 71.

<sup>2</sup> H. Payne, *Neocorinthia*, p. 69 and pp. 53 ff.

<sup>3</sup> E. Meyer, *Reich und Kultur der Chetiter*, Berlin 1914, pp. 113-14, especially note 2.

face but most commonly only by the head alone with lack even of a suggestion of neck. The portraits of Humbaba have not the protruding tongue of the Gorgon and of Bes but they do have always the grimacing mouth with the two rows of teeth fully exposed. Even more than the early Gorgon portraits they stressed the wrinkles of the face, for the countenance was commonly drawn in a single line to bring out its likeness to the entrails of a sheep. Meyer points to Hittite art as the prototype for the half-kneeling running position of the Gorgon figures. This "knielaufen," however, was probably taken over by the Hittites from Babylonia, and we find the position very much more common in Assyrian than in Hittite art. It is in the Mesopotamian valley that we obtain the explanation of the position, probably first portraying simply the intensity of the struggle,<sup>1</sup> later the suggestion of quick motion.

In Assyrian legend Humbaba played a most interesting rôle. To guard the cedars of the forest and to terrify human beings, the God Bel had destined Humbaba. His voice is like a tempest, his mouth like that of the gods and his breath a wind. Especially under his protection is the sanctuary of Irmini (Ishtar), a part of the forest of cedars in which he dwells.<sup>2</sup> Another version of the epic describes his cry as a hurricane, his mouth, fire, his breath, death. He was a raging being whose might was irresistible.<sup>3</sup> He was not always, however, a raging destructive force. Sidney Smith describes him as a minor deity who acted as Tammuz's guardian over evil spirits and might be beneficent or malevolent like other beings of this order, e.g., the šedu.<sup>4</sup> In a text quoted by Thureau-Dangin (*Revue d'Assyriologie*, 22, 1925, p. 26), this aspect is clearly revealed, for the dedicant calls in the following words on Tammuz to bring in his voyage to the country of the dead, the evil spirit which persecutes him, "To the powerful Humbaba, the demon who does not pardon, confide him, that he may be separated from me." Humbaba has then, as Thureau-Dangin remarks, become as Pazuzu, a tame demon whose face has a protective virtue.

It is veritably astonishing how well these characteristics fulfill the requirements laid down in Homer and the elements carried through the later tradition. The demon has a very direct connection with the great goddess through the protection of her sanctuary. His face has a protective virtue especially against evil spirits, a symbol, therefore, which would be most appropriately placed on shield and aegis. His voice is a tempest, his cry, the hurricane, his breath, death. Surely the derivation of Gorgo from "garj" could not have a more natural cause. The eyes are not especially mentioned but the whole countenance of the demon himself is irresistible and brings death. Possibly an echo of his connection with the land of the dead we may see in the fear of Odysseus that the Gorgon's head may be sent up from Hades. It is worth remark at least that the head which remains above on the aegis of Athena and Zeus should also be guardian of the region below.

The story of the killing of Humbaba by Gilgamesh and his faithful companion Enkidou is too well known to be repeated here. There are, however, certain points which should be mentioned. Gilgamesh and his friend accomplished three great

<sup>1</sup> Hugo Prinz, *Altorientalische Symbolik*, Berlin, 1915, p. 113.

<sup>2</sup> P. Dhorme, *Textes religieux Assyro-Babyloniens*, Paris, 1907, p. 229, Col. V, 1.

<sup>3</sup> Jastrow and Clay, *Old Babylonian Gilgamesh Epic*.

<sup>4</sup> *Annals of Archaeology* (University of Liverpool) 1924, p. 108.

tasks: the slaying of Humbaba, the killing of the celestial bull, and the destruction of the lions. The quest of Humbaba carries them to most distant lands and is apparently, to judge from the length of the description, the most dangerous and difficult task of all. It forms the principal refrain in their songs of triumph, "We have killed Humbaba who lived in the forest of cedars."<sup>1</sup> The wandering hero, performer of many great deeds, slays the demon power, and thereafter we see in art the representations of the head alone, the hideous mask of the monster. Certainly the parallel between this account and the story of Perseus' victory over the Gorgon could not be overlooked. Moreover the Humbaba account, as the central episode in the Gilgamesh story, is just the story which we should expect to be carried to the West. Gilgamesh was the great hero of the Babylonians, the story of his deeds makes the subject of the great Babylonian epic. The poem naturally passed to the Assyrians and the popularity of the story increased rather than waned. So great was its renown and so widespread its popularity that in the archives of Bogaz Keui in central Asia Minor fragments of the legend have been found. (See J. Friedrich, *Zeitschrift für Assyriologie*, XXXIX, 6-15 and A. Ungnad, "Das hurritische Fragment des Gilgamesch-Epos," *Zeitschrift für Assyriologie*, XXXV, pp. 133 ff.) And interestingly enough, it was from the library of Ashurbanipal that the chief tablets of our texts were recovered. Fragments of four different copies of the same tablet in the library of Ashurbanipal attest its immense popularity. Surely if Assyrian art in the reign of Ashurbanipal should so strikingly affect Greek art we should confidently expect to find echoes of the great Assyrian-Babylonian hero.

There was, moreover, a special reason why the story should have a vogue in Syria, for it was there that the home of Humbaba was located. Possibly originally, as Dhorme believes, Humbaba belonged to Elam.<sup>2</sup> Clay, however, has made out a very strong case for the belief that Humbaba belonged to the Amorites and that the Lebanon forest was his original home.<sup>3</sup> It is pretty generally believed now that the great cedar forests referred to lay in Syria, though opinion is divided between Mount Amanus, a spur of the Taurus in north Syria, and the Lebanons.<sup>4</sup> Certainly to the Assyrians in the time of Ashurbanipal mention of a great stretch of cedar forest could only have meant that in the Syrian west. Even in Greek times, the name of Humbaba seems to have survived in Syria, for in the legends recorded by Lucian of the founding of the shrine of the great Syrian goddess at Hieropolis we have Combabos, as the principal hero.<sup>5</sup>

As to the route of the Assyrian legend to Greece, it was of course logically through Cyprus and Syria that the story proceeded. Indication of its passage through this region and additional proof of its Assyrian origin may perhaps be seen in the

<sup>1</sup> Dhorme, *Textes religieux*, p. 293, Col. V, 1, 10; p. 263, Col. V, 1, a, line 6, etc.

<sup>2</sup> P. Dhorme, *op. cit.* p. 219, note 14.

<sup>3</sup> A. T. Clay, *The Empire of the Amorites*, Yale Press 1919, pp. 87 ff. Cf. *The Origin of Biblical Tradition*, Yale Press 1923, pp. 41, 57 and 88.

<sup>4</sup> Gressmann, *Gilgamesh Epos*, pp. 111 ff. Cf. S. Smith in *Annals of Archaeology*, II, 1929, pp. 108-9; Ch. Virolleaud, "La Montagne des Cèdres dans les traditions de l'ancien Orient," *Revue de l'Histoire des Religions*, CI, No. 1, 1930.

<sup>5</sup> Lucian, *De dea Syria*, 19 ff. Cf. Dhorme, *op. cit.* p. 217, note 7 and Harmon's note in the Loeb Series, Lucian Vol. IV, p. 366, note 1.

provenance of the harpé, the weapon which replaced the sword as the characteristic armor of Perseus. The harpé was a very old instrument and a very popular one in the ancient East. Petrie has already traced its movement to Egypt from its original home in Chaldea.<sup>1</sup> Harpés appear on some of the Hittite monuments;<sup>2</sup> one was discovered in a grave at Gezer;<sup>3</sup> they were apparently the royal weapon of the early kings of Byblos<sup>4</sup> and they were most popular on Babylonian-Assyrian monuments. The famous statue of Ashurnasirpal in the British Museum shows the king holding a sickle-shaped harpé in his right hand.<sup>5</sup> In the Louvre, an eighth century statue from the palace of Sargon portrays a hero holding a clawing lion under one arm and the long, slightly curved harpé in the other. The monument is described as a representation of Gilgamesh or the Assyrian Herakles. This last monument is of especial interest, for, as opposed to the monuments of Asia Minor and Egypt, the weapon is actually used against a foe, not employed merely as symbol or attribute of royal powers. The harpé or scimitar is in fact the characteristic weapon of Marduk on Babylonian seals especially in representations of his fight with the dragon Tiamat. In Assyrian art, the god fighting an ostrich, or a fantastic creature representing either Tiamat or the spirit of disorder, most commonly attacks with the harpé. The hero, therefore, of any Greek story influenced by Assyrian tradition might be expected to carry this weapon, especially if he were contending with a monster. It is no surprise, then, to find that Herakles or his companion is sometimes armed with



FIG. 1.—FACE OF  
HUMBABA  
(Courtesy of the  
British Museum)

the sickle-shaped sword in his fight against the Hydra and the Crab. A vase in the Berlin Museum shows Herakles with sickle-shaped sword, Iolaos, with a torch in each hand. On a representation from Aegina it is Iolaos who has the harpé. Herakles bears the curved sword again on a vase in Paris, and it is the sickle which he carries in a small statue group from Cyprus.<sup>6</sup> The Assyrian influence, therefore, which laid such great stress at this time on the harpé as weapon against the powers of evil, is strong enough to affect even the legends of Herakles, especially on the island of Cyprus. In the Perseus-Gorgon story that influence is still stronger so that the curved sword becomes the regular weapon of the hero. Once more we feel that the analogy of the

Greek story to the Assyrian legends was very strongly founded in tradition.

Another aspect of the Humbaba tradition in Babylonia and Assyria has recently been brought to light. Characteristic of representations of the face of the demon is the single raised line with which it is drawn. It is the weaving about of this line which makes the mask a mass of wrinkles and which brings to the countenance the resemblance to sheep-entrails occasionally mentioned in the texts (Fig. 1). Sidney Smith is quite right in stating, therefore, that until further evidence is forthcoming

<sup>1</sup> Sir F. Petrie, *Tools and Weapons*.

<sup>2</sup> J. Garstang, *The Land of the Hittites*, London, 1910, pls. LXIX and LXXV. Cf. *Syria*, X, 1929, p. 7.

<sup>3</sup> Macalister, *Gezer*, III, pls. LXXIV-LXXV.

<sup>4</sup> *Syria* VII, 1926, pp. 253 ff.

<sup>5</sup> Nimrud collection. E. Wallis Budge, *Assyrian Sculptures in the British Museum*, London, 1914, pl. I.

<sup>6</sup> For a review of these monuments see, A. C. Merriam, "Hercules, Hydra and Crab," in *Classical Studies in Honor of Henry Drisler*, New York, 1894, pp. 218 ff.



it is more than doubtful whether any object of the late period (after 1000 B.C.) is intended to represent Humbaba unless that characteristic feature, the single line, belongs to it. All we know, he states, about the representation of Humbaba is summed up in that.<sup>1</sup> Thureau-Dangin, however, has recently contended that the category of Humbaba representations must be expanded to include certain terracotta masks and relief statuettes which represent a broad-faced demon whose lips are drawn back to reveal the teeth, and from whose nose S-shaped twisted tufts hang down to below the chin.<sup>2</sup> The face, though it does not contain the omen-lines of the Humbaba masks, is otherwise not unlike the Humbaba representations (Fig. 2). It may be said in support of his contention also that this type of mask with prominent teeth and thick ridged lines of the rictus around the mouth and over the nose is most common and occurs very frequently, just as do the single line representations, without any suggestion of neck (Fig. 3). Eight examples were found in Babylon where they were fastened by bronze nails to the heads of tombs; Thureau-Dangin mentions having seen several in the hands of a dealer<sup>3</sup> and Mrs. Van Buren collected ten in her catalogue of clay figurines.<sup>4</sup> Very recently Opitz has published a very interesting little clay relief which, he believes, represents the death of Humbaba.<sup>5</sup>



FIG. 2.—BABYLONIAN DEMON

(Courtesy of Yale Babylonian Collection)  
Y. B. C. 10.027



FIG. 3.—BABYLONIAN DEMON  
(Courtesy of Yale Babylonian Collection)  
Y. B. C. 10.066

As the photograph shows (Fig. 4), the relief portrays a monster kneeling on the ground and attacked on the one side by a hero armed with a dagger, and on the other by an opponent brandishing an axe and supported by another figure behind. The monster gradually falling beneath the weight of the onslaught has long hair, part of which is grasped by his adversary on the right, up-standing ears, arms which end in the paws of an animal, and legs completed with the claws of a bird. His countenance is grimacing, broad and represented *en face*. From the nose and upper cheeks S-shaped tufts of hair hang down to below the chin. He is clad in a dress without shoulder band reaching from the breast to the upper thigh. From evidence as to the arrangement as a whole, the weapons

<sup>1</sup> S. Smith, "The Face of Humbaba," *Journal of the Royal Asiatic Society*, 1926, pp. 440-2.

<sup>2</sup> F. Thureau-Dangin, "Humbaba," *Revue d'Assyriologie*, 22, 1925, pp. 24-26.

<sup>3</sup> F. Thureau-Dangin, *op. cit.*, p. 26.

<sup>4</sup> E. Douglas Van Buren, *Clay Figurines of Babylonia and Assyria*, Yale University, 1931, pp. 216-17, Nos. 1047-56.

<sup>5</sup> D. Opitz, "Der Tod des Humbaba," *Archiv für Orient-Forschung*, 5, 1928-9, pp. 207 ff.

of the victorious warriors and their dress, Opitz makes a very strong case for the theory that the scene is actually a representation of the death of Humbaba.

To the identification of the demon on Opitz's relief with Humbaba, there is, however, a very great and, I am afraid, insuperable difficulty, for the figure on the Babylonian plaque corresponds very closely to representations of the wind-demon Pazuzu. Langdon<sup>1</sup> in his recent volume on Semitic mythology describes this monster as a four-winged demon with half-human, half-canine head and wide, grinning mouth. When one reads further that his hands were those of a savage wild animal



FIG. 4.—DEATH OF DEMON (HUMBABA)

(Courtesy of Kaiser Friedrich Museum, Vorderasiatische Abteilung. V. A. F. 246)

and that the legs terminated in the talons of a bird of prey, one sees at once how near we are to the representation on Opitz's relief. Even the further details of legs covered with feathers and a scorpion tail would not serve to sever the plaque entirely from the Pazuzu category, especially with the present far-from-clear representation that we possess.

If we admit, however, that Opitz's demon belongs to the category of Pazuzu rather than Humbaba representations, then we must refuse to accept Thureau-Dangin's heads with grimacing countenance and S-shaped tufts of hair as belonging to a purely Humbaba group, for these obviously have the same features as the demon of Opitz. Both the plaque published by Thureau-Dangin and a plaque of the same type published by Mrs. Van Buren show the similarities at once. Our photograph shows the latter (Fig. 2), one of the figurines of the Yale Babylonian collection, a figure characterized by protruding ears, squinting eyes with sharply incised lids and gaping mouth with rows of teeth tightly clenched. Thick ridges are portrayed around the mouth and across the nose, ending in spirals curving outward below the chin. The raised right arm ends in a lion's paw instead of a hand. We

<sup>1</sup> S. H. Langdon, *Mythology of All Races*, Vol. V, p. 371.

should, therefore, stand on very uncertain ground if we based the transposition of the Humbaba art-type to Greece on such evidence.

Nevertheless, though one may not accept their conclusions, the studies of these two scholars are of great interest for our investigation of the relationship between the Humbaba and the Gorgon tradition. In the first place, the figures of Thureau-Dangin and Opitz are not far distant from early Gorgon types in Greece, a fact which requires some explanation. Secondly, their researches have revealed the difficulty of finding a distinct class of full figures belonging to the Humbaba group or of scenes representing Humbaba's struggle with Gilgamesh. As far as our present evidence goes, the Greeks of the seventh century would have experienced the same difficulty if they had insisted on obtaining a class of full figures and battle-scenes representing solely and simply Humbaba and his struggle with Gilgamesh. While, however, the relief of Opitz approaches Greek representations of the Gorgon-Perseus story, it does not differ materially from the large class of Assyrian reliefs representing the struggle of hero against demon. It is worth while considering the possibility, therefore, that the Greek, reflecting in the Perseus-Gorgon legend the struggle of Gilgamesh and Humbaba, chose in art specimens of the general Assyrian interpretation of hero *vs.* demon as prototypes for their own representations of Perseus fighting the Gorgon.

First of all, there must be considered the representation on a seal-cylinder from Cyprus<sup>1</sup> first published in 1898 and included tentatively in the Perseus-Gorgon group by Kuhnert in Roscher's *Lexicon* III, 2, p. 2032, fig. 5. The demon on this cylinder has long, upstanding hair, legs which end in the claws of a bird, apparently paws instead of hands, and a broad countenance depicted full face (Fig. 5). The creature has been forced to its knee but has not yet reached the falling position of the monster on the earlier Babylonian plaque. Just as in the Babylonian relief, the wrist of the raised right arm of the monster is grasped by its opponent. The antagonist on the Cyprian seal, however, in accordance with the Greek Gorgon tradition, turns his head to avoid the sight of the countenance. As one expects, this "Perseus" is armed with the Assyrian-Cyprian sickle or harpé. Ward<sup>2</sup> in his *Seal Cylinders of Western Asia* calls attention to the fact that on the cylinder the monster is not female and has neither the protruding tongue nor the wings of archaic Greek forms. He concludes, therefore, that it is more probably the figure of one of the giants, with whom Zeus fought. We may now say, at least, I believe, with the evidence of Opitz's relief and Thureau-Dangin's heads before us that the lack of wings and protruding tongue as well as the sex are due more to the stronger Assyrian tradition. It is perhaps worth noting that in the Cyprian presentation the spiral or S-curl beneath the chin is not portrayed but is replaced apparently by the outward



FIG. 5.—CYPRIAN CYLINDER

(Courtesy of the Kaiser Friedrich Museum, Vorderasiatische Abteilung V. A. 2145)

<sup>1</sup> *B.C.H.* XII, 1898, p. 452, fig. 4.

<sup>2</sup> W. H. Ward, *The Seal Cylinders of Western Asia*, Washington, D. C. 1910, pp. 211-12.

curving locks of hair on either side of the cheeks. Is this perhaps in deference to the Greek tradition of a female Gorgon?

On the other hand, we are certainly on sure ground when with Ward we say that the cylinder represents a hero or god attacking an enemy and call that enemy giant or demon according to our interpretation of the claws on the legs and the monstrous

head. The representation as a whole clearly falls into that large Assyrian class portraying the death of a powerful enemy. One example of this common Assyrian type, a seal cylinder found in Assur,<sup>1</sup> will serve to show the general scheme and to link the Cyprian seal and Opitz's relief into this one large class. The enemy on this Assyrian cylinder has been forced to his knee (Fig. 6), in this case the right, by his two opponents. His arm beside the bent knee falls close to the ground in a position almost exactly the same as that of the Cyprian seal except that



FIG. 6.—ASSYRIAN CYLINDER

(Courtesy of the Kaiser Friedrich Museum, Vorderasiatische Abteilung, 4215)

the hand in this case grasps the ankle of an opponent. The left forearm is not apparent but evidently there was a sharp bend at the elbow and the forearm was held vertical, for one may see the fingers of the hand on the elbow of his assailant. Legs are in profile, the upper body and head full front. The giant of the Assyrian cylinder is obviously not the same as the one represented on the Cyprian seal and Babylonian plaque, for the Assyrian is entirely human in body and head. That all three, however, fall into a very definite and distinct type in which the evil spirit or enemy is represented beaten down to one knee and about to be slain by the hero or god is obvious. Characteristic of this type is the representation of legs in profile, body and head full front. It is into this class that the representations of Perseus' struggle with the Gorgon fall.

The Gorgon from the western pediment at Corfu provides the most striking example of the similarity (Fig. 7). The demon has been forced to rest its weight on its right knee, its right arm falls down along the body, though not quite as far as in the Cyprian and Assyrian examples. The left upper arm like that of the Cyprian monster reaches forward with forearm raised sharply. Legs are in profile, body and head represented full front. As on the Cyprian seal



FIG. 7.—CORFU. GORGON FROM WESTERN PEDIMENT

FROM RICHTER, *Sculpture and Sculptors of the Greeks*, 1929, FIG. 76

(Courtesy of the Yale University Press)

<sup>1</sup> From the Vorderasiatische collection in Berlin, V. A., 4215.

the head is disproportionally large and like both Cyprian and Babylonian representations, unnaturally round. The Gorgon is clad in a garment exactly similar to that of the Babylonian relief except that it goes over the shoulders. A second illuminating example comes from a metope of Temple C at Selinus (Fig. 8). The Gorgon in this case has neither wings nor serpents. Perseus grasps the demon by the hair, a form of attack perhaps reminiscent of the long-haired monster on the Babylonian plaque. Behind Perseus stands Athena, evidently supporting the hero though taking no active part in the struggle, just as on the Babylonian plaque the little figure behind supports the heroes but does not himself attack. The Gorgon, like the Cyprian and Assyrian figures, is nude. This Gorgon from Selinus has both hands down, holding the new-born Pegasos. Its position, however, with one knee on the ground, the other advanced, legs in profile, upper body front, throws it at once into the category of the Assyrian-Babylonian type. Both the Selinus and Corfu sculptures are purely Greek, not Assyrian; both, however, are variations of the common Assyrian type.

The Greek type developed fast and the Greek artists introduced many innova-



FIG. 8.—PALERMO. PERSEUS CUTTING OFF THE HEAD OF MEDUSA, FROM METOPE C, SELINUS. AFTER RICHTER, *Sculpture and Sculptors of the Greeks*.

(Courtesy of the Yale University Press)



FIG. 9.—AFTER H. PAYNE, *Necrocorinthia*, 1931, P. 80, FIG. 23

(Courtesy of the Clarendon Press)



tions. The protruding tongue and the female sex are almost universal in the Greek types. In the Gorgon from Corfu are portrayed the serpents and the wings but not yet the tusks. These differences, in view of the wide variation introduced



FIG. 10.—GORGON HEAD FROM ATHENS

(G. Dickins, *Catalogue of the Acropolis Museum*, No. 701)

Corinth (Fig. 14). The sculptured head from Athens (Fig. 10) shows the style even more clearly, representing even the little squares into which the curls were divided. The interesting head with wild, upstanding hair of the male Gorgon from Sparta (Fig. 11) recalls the hair of the demon of the Cyprian seal and so the long-haired demon from Babylonia.

Parallels in the full length figure between Assyrian and Greek forms are equally striking both in respect to position and to dress.



FIG. 12.—ASSYRIAN CYLINDER (AFTER WARD, *Seal Cylinders of Western Asia*, FIG. 642)

(Courtesy of the Carnegie Institution of Washington)

Ward (Fig. 12). As Ward remarks, the giant has fallen on one knee and rests his hands unresistingly on his hips. It is exactly this passive position which the Gorgon from Syracuse (Fig. 9, E) has taken, though here the Pegasus has been introduced under the right arm. The second style, harking back to the dress of the demon

by Greek originality in figures of the sphinx, the chimæra, and the sea-beast, do not surprise us. What is astounding is the recurrence of certain Assyrian details in spite of the obviously Greek interpretations. In Payne's earliest head (Fig. 9, A of his illustration) the headdress is composed of the horns curving over the center of the forehead so common in the representation of Assyrian divinities. His second head (B) displays the wide lines of the rictus taken from Assyrian demon heads and the characteristic curls over the forehead. Both the cylinder from Assur and the Yale demon head portray the common style of Assyrian hair-dressing, a series of waves or curls ending on the forehead. The Greek painters representing the end of these curls introduced the succession of curls on the forehead. The curls running back over the top of the head are found painted on the running Gorgon from



FIG. 11.—HEAD FROM SPARTA

(A. Z. 1881, Taf. 17)

on Opitz's relief, is illustrated best perhaps by the figure on the lion base from Sindjirli (Fig. 13). As the photograph shows, the dress is short and caught at the waist by a girdle. A fringe or ornamented border adorns its hem. The Sindjirli base requires special attention, moreover, for the position of the arms, both raised with slight bend at the elbow, is just the position found in the running Gorgon from Corinth (Fig. 14). The perfect parallel between the position of the Corfu Gorgon and the demon on the Assyrian cylinder from Assur has already been pointed out. In art types, therefore, both of the Gorgon head alone and of the full figure, the dependence of the Greeks on the Assyrians is unmistakable.



FIG. 13.—AFTER E. MEYER, *Reich und Kultur der Chetiter*, FIG. 83

It is not inappropriate to mention here in contrast to these similarities in the Assyrio-Greek tradition the wide gap between this type and other foreign representations with which the Gorgon has been compared. One glance at the common portrayal of the Egyptian Bes (Fig. 15) will convince us that the similarities practically begin and end with the hideous face. Even in the countenance almost the only parallels are a tongue apparent, sometimes protruding, and extended ears.



FIG. 14.—RUNNING GORGON FROM CORINTH. AFTER PAYNE, *Neocorinthia*, P. 82, FIG. 24

(Courtesy of the Clarendon Press)

There is no suggestion in the Bes story of a severed head or of slaying by god or hero. The Subarean-Hittite interpretation of the death of Humbaba is depicted on a curious relief from Tell Halaf.<sup>1</sup> The relief (Fig. 16) depicts the struggle of Gilgamesh and Enkidou as Baron von Oppenheim interprets it, but how different is the tradition here in the representation. One may almost say that the only point of similarity to the reliefs of Babylonian demons is the bandy legs of the creature; the only parallel with the Babylonian plaque, the attack by an enemy on either side. Neither of these two details has been accepted by the Greeks. The relief, however, is most useful, for it brings prominently to view how popular was the story of the destruction of the demon and how widely the Hittite interpretation differed from the Babylonian-Assyrian. The attempt to find the origin of the Gorgon in the beautiful figures of the Egyptian goddess Hathor because she is represented full face, sometimes with head alone and

incompletely to view how popular was the story of the destruction of the demon and how widely the Hittite interpretation differed from the Babylonian-Assyrian. The attempt to find the origin of the Gorgon in the beautiful figures of the Egyptian goddess Hathor because she is represented full face, sometimes with head alone and

<sup>1</sup> Baron Max von Oppenheim, *Tell Halaf*, Leipzig, 1931, Pl. 36a.

connected with a decapitation story<sup>1</sup> is, I think, amply refuted by the remark of Payne that the earliest Greek examples in the Protocorinthian and early Corinthian art stand out from later examples by the far more powerful expression of the original apotropaic idea.<sup>2</sup> Certainly the development would be reversed if the Hathor type were the original.



FIG. 15.—FIGURES OF BES. AFTER W. ANDRAE, *Die Kunst des alten Orients*, P. 428  
(Courtesy of the Propyläen-Verlag, Berlin)

In the Assyrian-Babylonian representation of god or hero attacking demon or giant, one finds startling similarities to the Greek portrayals of Perseus attacking the Gorgon. In the other eastern art there are almost no resemblances. One may perhaps say with Payne that the Gorgon received through Greek artists an entirely individual character; one must strongly modify his statement that the origin of the Gorgon in eastern art is merely a possibility. I think we may confidently say that the full figure portrayal of the Gorgon, introduced into Greek art shortly after the middle of the seventh century, came over directly and with very slight modification from an Assyrian-Babylonian type of demon or giant. We have already seen that details of decoration, e.g. the rosette, changes in the representation of lions and horses came to Greek art from the Assyrian just at this time. To this list must now be added this kneeling, half front, half profile figure with round prominent head: a demon attacked and about to be killed by hero or god.

When this thesis is granted, a further most interesting question comes up; can one see in this artistic tradition an interpretation of the Gilgamesh-Humbaba story? It may be said at once that this problem can by no means be settled as yet. One may point out again that if one does not accept the Opitz plaque, there is no representation of the struggle of Humbaba and Gilgamesh in the purely Babylonian-Assyrian art to which we may refer with certainty. This does not mean that there were no such representations, but it suggests, at least, that they were very uncommon or that

one must strongly modify his statement that the origin of the Gorgon in eastern art is merely a possibility. I think we may confidently say that the full figure portrayal of the Gorgon, introduced into Greek art shortly after the middle of the seventh century, came over directly and with very slight modification from an Assyrian-Babylonian type of demon or giant. We have already seen that details of decoration, e.g. the rosette, changes in the representation of lions and horses came to Greek art from the Assyrian just at this time. To this list must now be added this kneeling, half front, half profile figure with round prominent head: a demon attacked and about to be killed by hero or god.



FIG. 16.—DEATH OF DEMON (HUMBABA). AFTER FREIHERR VON OPPENHEIM, *Tell Halaf*, 180 B, PL. 36 A

(Courtesy of F. A. Brockhaus, Leipzig)

<sup>1</sup> Raffaele Pettazzoni, "Le Origine della Testa di Medusa," *Bollettino d'Arte*, Serie II, 1921-22, pp. 491 ff.

<sup>2</sup> *B.S.A.*, XXVII, 1923-26, p. 130.



the story was represented by the more common types of struggles of god or hero against demon. In this connection it is well to remember that in Assyrian representations of figures of gods and figures of demons the differentiations between one and another in the same class was not always clearly defined. One may suggest, therefore, from the Assyrian side that in some of the representations, the popular Gilgamesh-Humbaba story was certainly in the mind of the artist.

From the Greek point of view one may only point to the imitation of this Assyrian hero-vs.-demon type in Greek art, recapitulate the similarities in story of the Perseus-Gorgon and the Gilgamesh-Humbaba traditions, and recall the fact that the story of the Gorgon-slaying comes into Greece just when the Gilgamesh story seems most popular in Assyria. The evidence from Homer that only the head was known in his time is just what we should expect in view of the wide popularity in art of Humbaba's head alone, compared with the rare examples of the battle scene. Humbaba's head was used as an apotropaic symbol and obviously we have the same employment of the Gorgon's head on the aegis of Athena and Zeus. In the reign of Ashurbanipal there were many copies of the Gilgamesh story in the royal library; just at that time Assyrian art for the first and only time powerfully affected Greek painting and sculpture; in this same period the story of the slaying of the Gorgon by Perseus appears full-grown in Greek legend. The dependence of the Greek story and the Greek art-types on Assyrian culture can scarcely be doubted; the solution of the question of just how they were linked together can confidently be left to future archaeological investigation.

The greatest difference between the Assyrian-Babylonian and the Greek demons is, I believe, the fact that the Greek monster is female, the Assyrian male. I do not believe it is quite sufficient merely to say with Furtwängler that the earliest Greek representations are male heads, for in Homer the Gorgon is already female, and even if we confine ourselves to the art-type we have no logical reason for the shift. It is well to remember, however, that if the head alone was prominent at first and that head sometimes represented with the raised line of the omen-masks it would have been perfectly possible for strangers to consider it a female head, especially for the Greeks for whom the name Humbaba or Hawawa would have had a feminine ending. Once the feminine tradition was established in Homer, the representations would be made to comply. It is only remarkable that under the circumstances we have the few Greek heads with beard, a rather strong indication that some powerful outside force presented a male tradition. In respect to this change from the male Humbaba to the female Gorgon a most curious fact comes to view which may perhaps suggest some cause in the development. Professor Harmon<sup>1</sup> calls attention to the fact that while in Lucian's time the hero of the shrine of the great Syrian goddess, Ata, was Kombabos, in Phrygia, Cybele is served by Attis. The connection between Attis and Ata is, he believes, indubitable and he suggests an analogous connection between Kombabas (Assyr. Humbaba, Babylonian, Hawawa), and *Kύβηβος* (Gallus), *Κυβήβη* (the goddess Cybele). We can scarcely as yet push this analogy very hard but if there was a connection in name between Humbaba and Cybele as between Attis and Ata, then it is not impossible to believe that Humbaba in the Syrian tradi-

<sup>1</sup> Loeb Series, Lucian Vol. IV, p. 378, note. 1.

tion could retain his function of demon but change his sex. His close connection with the great goddess in Syria may have fostered this tradition and a result may perhaps be seen in the famous Kamiros plate in which it is certainly the female goddess of Asia Minor who wears the Gorgon's head.

For the protruding tongue so general in early Greek presentations I know of no Assyrian parallels. Possibly the cleft between spiral curls suggested the feature; certainly it was introduced merely to increase the ugliness of the head. Very possibly the protruding tongue of Bes types was borrowed to adorn the head. It is certainly not true that all the features of the Greek Gorgon type or all the features of the Perseus-Gorgon story are derived from Assyrian sources. The curved wings and the snakes are both developed in Greek art, just as the glance of stone developed in Greek story. Probably the protruding tongue was the first contribution of the Greek genius. I think we may with safety assert, however, that very much more both in the artistic and the legendary tradition of the Perseus-Gorgon story is due to Assyrian influence than we have hitherto suspected.

Most interesting and important of all, one is able to allocate to a definite period and a definite place the transmission of certain elements of foreign legend into the Greek mythology. With such facts as a starting point we may be able to reach surer ground in the thorny subject of Greek mythological chronology and a still more satisfactory understanding of the strength and nature of outside forces which acted on the Greek genius.

CLARK HOPKINS

YALE UNIVERSITY

## HOW OLD IS THE GREEK ALPHABET?

IN a recent number of this JOURNAL Carpenter begins his article on *The Antiquity of the Greek Alphabet* with these words<sup>1</sup>:

For some time I have been expecting to encounter in learned journal or epigraphical treatise the authoritative pronouncement that the Greek alphabet was adopted from the Phoenician about the year 700 B.C. I have been expecting such a revolutionary assertion because the evidence gathered by classical and Semitic scholars is now sufficiently abundant and is so thoroughly consistent and emphatic that no other inference is any longer permissible. Yet, though the conclusion is unavoidable, I cannot find that anyone has cared or ventured to assert it. And meanwhile the old illusion of the great antiquity of the Greek alphabet persists.

Since the conclusion that Carpenter draws seems to me quite impossible, I cannot let his statement pass unchallenged, though I regret the necessity of disagreeing with so distinguished a scholar. To be sure, some of his arguments have already been answered in my article published in this JOURNAL<sup>2</sup> long before he gave expression to them. But because Carpenter overlooked this article or decided that it was without validity and because there are a number of new points to make, as well as new evidence, it seems desirable to discuss the matter again in greater detail. Not only is there no abundance of evidence for the late date which Carpenter defends, but there is on the contrary much new evidence that the Greeks adopted the alphabet even earlier than used to be supposed.

The "great antiquity" to which Carpenter alludes is defined by him as 900 B.C. or earlier. In the Semitic field the only scholars he quotes are Lidzbarski (1898), whose work he acknowledges is "no longer very up-to-date," and Cooke (1903), with the remark: "I have not been able to familiarize myself with the widely scattered literature sufficiently to know how far this extreme verdict still reigns unchallenged among Semitic scholars today, but gather that present-day opinion would favor a period of transmission later than the tenth century." It seems unfortunate that Carpenter was unable to examine the large literature on the origin of the alphabet which has appeared in recent years.<sup>3</sup> Its bearing on the antiquity of the Greek alphabet is not inconsiderable.

One difficulty is that the problem has not always been approached in the proper way. Students of Greek epigraphy have not acquainted themselves fully with the Semitic side, and the Semitists have taken their facts about Greek at second hand. Furthermore, the problem is in part purely palaeographical and its solution depends to some extent on the observation of writing trends.

It must be admitted at the outset that a few Semitists have recently referred the adoption of the Greek alphabet to a date as late as the ninth century. In part they have relied on the statements of Greek scholars, in part they have been misled. Thus the only reason which Dussaud suggests for this date is the absence in Greek of the peculiar alpha of the earliest Phoenician inscription (that of King Ahiram at

<sup>1</sup> XXXVII, 1933, p. 8.

<sup>2</sup> XXXI, 1927, pp. 326-8.

<sup>3</sup> I need not review or list it here. The reader is referred to my earlier article and to the bibliographies in the articles and books listed in my *Ancient Writing and Its Influence*, New York, 1932. New material is appearing constantly; some of it is mentioned in this article.

Byblus in the thirteenth century).<sup>1</sup> But Dussaud wrote this before the discovery of an inscription which he himself later attributed to the twelfth century—and this inscription has a satisfactory prototype for the Greek alpha.

Before 1916 the oldest Semitic inscription known was the Moabite stone of King Mesha of the ninth century. From this fact scholars argued that the alphabet was invented not more than a few hundred years before this time. Necessarily, therefore, Greek scholars concluded that the ninth century, to which the earliest Semitic inscription belonged, must be the earliest possible date for the introduction of the alphabet into Greece. But recent discoveries show that the alphabet was invented much earlier. In my paper of 1927, I made the apparently rash statement that I was inclined to "set the origin of the alphabet at about 2000 B.C. or earlier." This view has been fully justified by recent finds. In 1931, Chester C. McCown, the director of the American School of Oriental Research in Jerusalem, wrote:

They come as a welcome confirmation of the great age of the alphabet. The evidence is rapidly accumulating in the last two or three years. . . . All of them together promise to push the origins of the alphabet far back toward 2000 B.C. or possibly beyond it, for a long period of time must be posited before the use of these characters in such inscriptions as those at Serābit.<sup>2</sup>

The Sinai (Serabit) inscriptions probably belong to the twelfth Egyptian dynasty;<sup>3</sup> a piece of pottery from Gezer inscribed with three characters reminiscent of those at Sinai is dated between 2000 and 1600 B.C.;<sup>4</sup> another inscription of three letters found some time ago at Tell el Hesy (Lachish) is now recognized as of the same type and is attributed to the thirteenth century;<sup>5</sup> inscriptions in a developed Phoenician script have been found at Byblus, one of which belongs to the thirteenth century and others to the twelfth and the tenth; the Ras Shamra cuneiform alphabet, apparently derived from the Semitic,<sup>6</sup> dates from the fourteenth or thirteenth century and probably was invented earlier.

These new discoveries, which push back the invention of the alphabet possibly as much as a full millennium, in large part remove the obstacles which have held the origin of the Greek alphabet down to a date as late as the ninth century. The surprising thing is not that scholars have not suggested a later date, but that more of them have not come out in favor of a still earlier one. As a matter of fact, three of the four recent writers whom Carpenter quotes (Kenyon,<sup>7</sup> *Cambridge Ancient History*,

<sup>1</sup> *Syria* V, 1924, pp. 150, 156.

<sup>2</sup> *A.J.A.* XXXV, 1931, p. 97.

<sup>3</sup> The latest possible dates for this dynasty are 2000–1800 but there is good reason to put it earlier (2200–2000).

<sup>4</sup> W. R. Taylor in *Jour. Palestine Or. Soc.* X, 1930, pp. 79–81; cf. Butin in *Harvard Theological Rev.* XXV, 1932, Plate XXVIII.

<sup>5</sup> W. F. Albright in *Arch. f. Orientforschung* V, 1929, p. 150. The Beth Shemesh inscription, ascribed by E. Grant (*Revue Biblique* XXXIX, 1930, p. 401) to 1700–1500 B.C., is put in the tenth or ninth century by Dussaud (*Syria* XI, 1930, p. 392) and still later by other scholars. The hieroglyphic inscription published by Dunand (*Syria* XI, 1930, p. 1) is not alphabetic and has no such bearing on the history of the alphabet as he suggests. Gelb (*Amer. Jour. Sem. Lang.* XLVII, 1931, p. 135) believes that this writing is based on Hittite hieroglyphs.

<sup>6</sup> A. T. Olmstead in M. Sprengling, *The Alphabet* (Oriental Institute Communications, No. 12, 1931), p. 57.

<sup>7</sup> Kenyon's unpublished lectures are mentioned by Carpenter as a source for a date at least as early as the tenth century, but these have now appeared in print (Frederic G. Kenyon, *Books and Readers in Ancient Greece and Rome*, Oxford, 1932) and suggest a date as early as the fourteenth century (p. 12).

*Encyclopaedia Britannica*) posit a very early date (eleventh century or earlier) and the fourth (Meyer) suggests 900 B.C.<sup>1</sup>

Incidentally it may be pointed out that Meyer's account of the alphabet is extremely antiquated and inadequate, a fact which is explicable partly by his lack of acquaintance with the literature, partly by a natural reaction to some of the fantastic absurdities which have been uttered by scholars who should know better. Meyer relies solely on von Bissing in attributing the Sinai inscriptions to the eighteenth dynasty (1600–1400 B.C.) instead of the twelfth, to which the great majority of scholars assign them. But von Bissing has since partially recanted, saying that the date he previously gave to these inscriptions is very probably too late.<sup>2</sup> To return to Meyer: he refuses to see any connection between the Sinai inscriptions and the Phoenician alphabet, he rejects the conclusions of such sound and conservative scholars as Gardiner and Sethe, he gives a late date (1000 B.C.) to the Ahiiram inscription found at Byblus, he denies any similarity between the Phoenician letters and the objects whose names they bear. Furthermore, Meyer died before the publication of the Gezer sherd, the decipherment of the Ras Shamra alphabet, and the discovery of additional early inscriptions at Byblus and elsewhere. It is no wonder that Carpenter, apparently depending chiefly on Meyer,<sup>3</sup> brushes aside the large literature on the subject. But that very reliance on Meyer, with his extreme skepticism, acts as a boomerang; if even Meyer was willing to set a date as early as 900 B.C. for the borrowing of the Phoenician characters by the Greeks, we should look upon that date as an absolute lower limit.

It is important for our purpose to note that Carpenter dates the earliest Byblus inscription "about 1000 B.C. or possibly considerably earlier," though in a footnote he admits that "professional epigraphists seem to prefer the thirteenth century B.C." This is in fact the almost unanimous opinion of scholars, resting on archaeological, not epigraphical, evidence. Carpenter is following Meyer's view, based on Spiegelberg and Lidzbarski.<sup>4</sup> But Spiegelberg's argument seems to me, who profess no competence in the field, to be extremely weak. Part (but only part) of the evidence for dating consists of two sherds bearing the name of Ramses II (thirteenth century) found in the tomb of Ahiiram. But as it is admitted that the graves were plundered in antiquity, Spiegelberg suggests that these sherds belong to vases that were brought from other tombs and stored here by grave robbers. While we must concede that this is a possibility, there is no reason to accept it without evidence. Furthermore Spiegelberg's point is not that the inscription cannot be as early as the

<sup>1</sup> E. Meyer, *Geschichte des Altertums*, II, 2, ed. 2, 1931, p. 72. Instead of citing further authorities for the antiquity of the Greek alphabet I shall content myself with presenting the evidence. I may say however that the latest expression of opinion, by Mentz in a review of my book on *Ancient Writing* (*Phil. Woch.* LIII, 1933, p. 1005), approves of a very early borrowing—earlier than generally supposed.

<sup>2</sup> *Filologu Biedribas Raksti* X, 1930, p. 75, n. 13.

<sup>3</sup> We may agree with Carpenter that Meyer's history is "perhaps the most authoritative of recent books in the field" without admitting that its authority extends to the history of the alphabet. Mentz (*Phil. Woch.* LII, 1932, p. 1270) in criticizing Meyer's treatment of the origin of the alphabet, speaks of the absolutely certain positiveness ("apodiktischen Gewissheit") characteristic of Meyer. We may note too Mentz's quotation from Sethe to the effect that no competent and unprejudiced investigator has ever doubted the correspondence between the names and the forms of the original Phoenician letters.

<sup>4</sup> *Orientalistische Literaturzeitung* XXIX, 1926, p. 753; XXX, 1927, p. 453.



thirteenth century but merely that the Ramses fragments furnish no argument for dating, and that the matter must be decided on other grounds. Lidzbarski goes even less far: he merely states that Spiegelberg's doubts are justified and should be set to rest by a more detailed statement as to the exact place of finding. On epigraphical grounds he finds no difficulty in attributing the inscription to the thirteenth century, though he thinks it might be later—any time before that on the statue of Shishak I (947–925). Montet, the excavator of the Byblus tomb, answers Spiegelberg and Lidzbarski completely by pointing out that the finds are all of a homogeneous character, belonging to the New Empire, whereas if the vases of Ramses II had been brought in at the time the tombs were plundered, material of other periods also would have been found.<sup>1</sup> He further calls attention to the resemblances of the sculptural material found in the tomb of Ahiham to that of the Egypt of Ramses' time. Dussaud too has repeatedly answered Spiegelberg's point.<sup>2</sup> As he puts it, Spiegelberg's remark awakened a doubt in Lidzbarski's mind and this doubt became a certainty in Meyer's. Dussaud in fact accuses Meyer of prejudice in ignoring the French discoveries in Syria. He sums up by saying that there are few monuments of a remote period which are as reliably dated as the sarcophagus of Ahiham. Valentin Müller, in a review of Montet's book,<sup>3</sup> comes out strongly for the latter's view, observing that it has been unjustifiably attacked and adding that the style of the sarcophagus, which had previously been inadequately reproduced, points to an early date. Finally, von Bissing vehemently defends Montet's dating and ridicules Spiegelberg's view.<sup>4</sup> He further states that Lidzbarski told him that the Ahiham inscription might well go back to the thirteenth century. I cite all this because the dating of the Ahiham script is highly important in studying the history of the alphabet.

Carpenter also argues that the alphabet must have changed more between the thirteenth and the tenth century than the difference between the earlier and later Byblus inscriptions indicates. But the tenth-century Byblus script is as much like eighth-century Semitic as it is like the earlier Byblian. If the script changed so little between the tenth and the eighth century it might have changed just as little in the two preceding centuries. By such reasoning we arrive at the twelfth century as a possible date for the earliest Byblus script on purely epigraphical grounds. Lidzbarski goes even further than this, saying that when we recall how little the alphabet changed on Phoenician monuments during the entire first millennium B.C. we may admit that it need not have undergone great changes in the three centuries before that. Dussaud calls attention to the remarkable unity which characterizes the alphabet from the thirteenth century to the eighth in widely separated countries.<sup>5</sup>

In addition to the Ahiham inscription, we have other early inscriptions from Byblus. That of Abibaal is inscribed on a statue of Shishak I and therefore must be dated between 947 and 925. That of Elibaal is cut on a statue of Osorkon I (925–889). The Yehimilk inscription can, unfortunately, be dated only by its script;

<sup>1</sup> Pierre Montet, "Byblos et L'Égypte, Quatre Campagnes de Fouilles à Gebeil" (*Bibliothèque archéologique et historique*, Tome XI), 1928, p. 227.

<sup>2</sup> *Syria* IX, 1928, p. 350; XI, p. 180; XII, p. 176; XIII, p. 226; *Arch. f. Orientforschung* V, 1929, p. 237.

<sup>3</sup> *Arch. f. Orientforschung* VII, 1931, p. 50.

<sup>4</sup> *Op. cit.*, p. 69.

<sup>5</sup> *Syria* V, 1924, p. 145.

Dunand<sup>1</sup> and Dussaud<sup>2</sup> put it in the twelfth century, but Leibovitch<sup>3</sup> thinks that it is even older than the Ahiram inscription. A short inscription on an arrow found at Roueisseh can be dated only by the writing; various scholars consider it as early as the twelfth century or as late as the tenth.<sup>4</sup> The Gezer calendar inscription is judged by its script to date from about 900.<sup>5</sup> The Samaria sherds can be dated about 865 without recourse to palaeographical considerations. Thus without counting the Sinaitic and similar inscriptions we now have seven documents in a developed Phoenician script which antedate the Moabite stone. They have revolutionized our conception of the early history of the alphabet.

Carpenter's first line of argument is that the earliest Greek writing of the seventh century agrees more nearly with contemporary than with the Moabite script (Table I, Col. 8). He finds that there are discrepancies between Greek writing and that of the Moabite stone in thirteen letters, saying of the latter (p. 11):

Notably, the "A" lies horizontally instead of vertically, with an extremely long upright stroke; the "B" has a form unknown to Greece; the "Z" is low and squat with a slanting bar; the "H" has two instead of three bars, and these are slanting; the "I" has a stroke too many (the primitive Greek form being a zigzag of only three strokes); the "K" is almost unrecognizable, resembling a three-tined fork with a tail; the "L" is curvilinear instead of angular; the "M" and the "N" have the tail-stroke curved instead of straight; the "P" is hooked instead of bent; the "S" (*shin*) is upside down; the "T" is an X; and the "V" (*waw*) is curvilinear at the top.

But the list is not as formidable as it seems. In the first place, this inscription strongly shows the influence of writing on papyrus; this fact accounts for the many curved lines to which Carpenter objects. Another inscription of the same period might lack this peculiarity. To come to details, the horizontal position of A<sup>6</sup> is just as characteristic of the eighth-century inscriptions which Carpenter thinks are more like Greek as it is of the Moabite stone; this form even occurs in one of the earliest Greek inscriptions in existence, that on the Dipylon vase in Athens, which many scholars put in the eighth century. That the B has a form unknown to Greece is a rather strong statement, but as Carpenter means it is true of all Semitic inscriptions. The four examples of Z on the Moabite stone (not on Carpenter's facsimile) have a bar whose slant is scarcely perceptible.<sup>7</sup> The I with a stroke too many is characteristic of all early Semitic inscriptions, including those of the eighth century. Only the extremely curved examples of K in the Mesha inscription are "almost unrecognizable"; several are not unlike the K on the later Semitic inscriptions.<sup>8</sup> The curved L is used

<sup>1</sup> *Revue Biblique* XXXIX, 1930, p. 321.

<sup>2</sup> *Syria* XI, 1930, p. 306.

<sup>3</sup> *Bull. de l'Institut français d'Archéologie orientale* XXXII, 1932, p. 84.

<sup>4</sup> Ronzevalle (*Mélanges de l'Université Saint-Joseph* XII, 1927, p. 8) puts it not later than the twelfth; Dunand (*op. cit.*) calls it eleventh or tenth; Virolleaud and Dussaud (*Syria* VIII, 1927, p. 185) make it tenth.

<sup>5</sup> Dussaud, *Syria*, VI, 1925, p. 328, and Lindblom, *Acta Academiae Aboensis, Humaniora* VII, 5, 1931, p. 15. But P. Dhorme (*Revue Biblique* XXX, 1932, p. 63; cf. *Langues et Écritures sémitiques*, 1930, p. 24) labels it ninth century. Earlier scholars, through lack of material for comparison, wrongly put it later.

<sup>6</sup> To avoid confusion I follow Carpenter's practice of using the corresponding letters instead of the Greek or Semitic names.

<sup>7</sup> Two of these occur in the lost part of the stone, known only from a squeeze. I have examined not only Lidzbarski's facsimile, but the photographic reproduction of F. Vigouroux (*Dictionnaire de la Bible*, IV, 1912, p. 1015) and a plaster cast in the Oriental Institute of the University of Chicago.

<sup>8</sup> See the fifteenth line of Carpenter's facsimile, first K from the right. Even better examples occur in the first and fourth lines of the inscription, omitted from Carpenter's reproduction, and elsewhere.

TABLE I—SEMITIC

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
KKKK	KKK	K	K	K	F	F	F	F	F	F	F	F	F	F	F	F	F
9999	999	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
777	777	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
	44	4		4	4	4	4	4	4	4	4	4	4	4	4	4	4
333	3				3	3	3	3	3	3	3	3	3	3	3	3	3
YYYY	YYY			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
I	I			I	I	I	I	I	I	I	I	I	I	I	I	I	I
HHHH	HHH	H		H	H	H	H	H	H	H	H	H	H	H	H	H	H
0																	
22	22	2		2	2	2	2	2	2	2	2	2	2	2	2	2	2
vvvv	vvv	v		v	v	v	v	v	v	v	v	v	v	v	v	v	v
llll	lll	l		l	l	l	l	l	l	l	l	l	l	l	l	l	l
33	333	3		3	3	3	3	3	3	3	3	3	3	3	3	3	3
ss	ss	s		s	s	s	s	s	s	s	s	s	s	s	s	s	s
ff				f	f	f	f	f	f	f	f	f	f	f	f	f	f
o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
777	77			7	7	7	7	7	7	7	7	7	7	7	7	7	7
	h	h		h	h	h	h	h	h	h	h	h	h	h	h	h	h
4999	99			4	4	4	4	4	4	4	4	4	4	4	4	4	4
w	w			w	w	w	w	w	w	w	w	w	w	w	w	w	w
+ + + +	x x			+ x	+	x	x	x	x	x	x	x	x	x	x	x	x

## NOTES ON TABLE I

So far as possible, the letters are reproduced from photographic reproductions rather than drawn copies, which are often very inaccurate. The source is given in each instance.

1. Ahiram, Byblus, XIII c. P. Montet, *Byblos et L'Égypte*, 1928, Pl. CXXXIX-CXLI (photographs of stone and of squeezes) and S. Ronzevalle in *Mélanges de l'Université Saint-Joseph* XII, 1927, Pl. III, IV (photographs of plaster cast).

2. Yehimilk, Byblus, XII c. M. Dunand in *R. B.* XXXIX, 1930, p. 322 and Pl. XV (copy, photograph).

3. Arrow of Roueisseh, XII-X c. R. Dussaud in *Syria* VIII, 1927, p. 185 (photograph).

4. Abibaal, Byblus, 947-925 B.C. R. Dussaud in *Syria* V, 1924, Pl. XLII (photograph of squeeze).

5. Elibaal, Byblus, 925-889. R. Dussaud in *Syria* VI, 1925, Pl. XXV (photograph) and p. 109 (copy).

6. Gezer calendar, ca. 900. J. Lindblom in *Acta Academiae Aboensis, Humaniora* VIII: 5, 1931 (photograph) and S. Ronzevalle in *Mélanges de l'Université Saint-Joseph* V, 2, Pl. XVI (photographs).

7. Samaria, ca. 865. G. A. Reisner, C. S. Fisher, D. G. Lyon, *Harvard Excavations at Samaria, 1908-1910*, 1924, I, p. 239 ff. (copy).

8. King Mesha of Moab, ca. 842. M. Lidzbarski, *Handbuch der nordsem. Epig.* II, 1898, Pl. I (copy).

9. Kalamu, Senjirli, ca. 825 (Kalamu's father reigned in the time of Shalmaneser III, 853-845). F. von Luschan, *Ausgrabungen in Sendschirli* IV, 1911, p. 375 (copy).

10. Nora, Sardinia, end IX c. (for date see R. Dussaud in *Syria* V, 1924, p. 145 and Lidzbarski quoted by von Bissing in *Filologu Biedrības Raksti* X, 1930, p. 75, n. 12; the unclear letter generally supposed to be a late form of *samekh* is explained as *mem* by Dussaud). Lidzbarski, *op. cit.*, Pl. II, 3 (copy).

11. Zakir of Hamath, ca. 800. H. Pognon, *Inscriptions sémitiques de la Syrie*, etc., 1907, Plates IX, X (photographs), XXXV, XXXVI (copies).

12. Hadad (Panammu I), Senjirli, beginning VIII c. Von Luschan, *op. cit.*, I, Pl. VII.

13. Cyprus bowl (Baal Lebanon), 753-745. Lidzbarski, *op. cit.*, Pl. II, 1.

14. Sefire, near Aleppo, 752-740 (for date see R. Dussaud, in *Comptes Rendus, Acad. Insc.*, 1931, pp. 318-319). S. Ronzevalle in *Mélanges de l'Université Saint-Joseph* XV, 1930-31, Pl. XXXIX-XLV, esp. XL, XLII, XLV (photographs).

15. Bar-rekub (building inscription at Senjirli), ca. 725. Von Luschan, *op. cit.*, IV, p. 379, Fig. 275 (photograph), 276 (copy).

16. Nerab, VII c. G. A. Cooke, *A Text-Book of North-Semitic Insc.*, 1903, Pl. V, VI (photographs).

17. Ur, VII c. (probably before Nebuchadnezzar, 604-562). E. Burrows in *Jour. Royal Asiatic Soc.*, 1927, Pl. VIII (photograph).

18. Carthage, IV-III c. Lidzbarski, *op. cit.*, Pl. XLIV, Col. 21.





also in the later Senjirli inscription supposedly so close to Greek. The angular form is less cursive and therefore presumably earlier. The S (*shin*) is in the same position in all Semitic inscriptions, including those of the eighth century and later.<sup>1</sup>

But it is not my purpose to argue that the Moabite lettering is the closest relative we have for the early Greek. I merely wish to point out that the Moabite stone is not as bad as it has been depicted. I agree with Carpenter that, at least in the case of some letters, other inscriptions have forms nearer the Greek than the Moabite stone has. But there we part company: I find the closest relatives of early Greek writing in inscriptions antedating the Moabite stone, Carpenter finds them in later inscriptions. In my earlier paper<sup>2</sup> I pointed out that the Greek alphabet can be derived from one like that used in the Ahiiram inscription quite as well as from one similar to that of the Moabite stone and other documents of the same period. But recent discoveries now lead me to say that there are closer parallels for the Greek alphabet in the earlier period than in the ninth century. Carpenter himself admits that a few forms of the Ahiiram inscription are "unaccountably" nearer the Greek than those on the Moabite stone. When we take into account the other early Semitic inscriptions the few forms become more numerous, as we shall see.

Lidzbarski remarked that in the eighth-century inscription of a bronze bowl found in Cyprus (Table I, Col. 13), two letters, Z and T, were more like the corresponding Greek letters than the Moabite characters.<sup>3</sup> This led him to suggest that the Cyprus bowl was older than the Moabite stone. The particular point about Z was its vertical stroke and about T its similarity to a plus sign rather than an X. But it must be remembered that Lidzbarski wrote long before the recent discoveries. We now know that a much better prototype of Z appears in the Ahiiram inscription and that a T in the form of a plus sign occurs in the same document.

Carpenter, however, disregarding the new evidence, elaborates Lidzbarski's suggestion. He asserts that early Greek agrees with the Cyprus inscription rather than the Moabite stone in eight letters. But why compare only with the Moabite stone? As to these eight letters, the type of agreement to which Carpenter refers is exactly the same as with the earliest Byblus inscription in H, L, N, T. The four other letters are A, K, M, Z. As to the first, it is said that it is "still on its side, but the cross-stroke is now short." The shortest cross-stroke is found in the early Byblus inscriptions and the tendency is for the stroke to become longer in the later period. Furthermore, two out of four examples of Cyprian A have the cross-stroke at the point where the other two strokes meet, as in the Ahiiram inscription. On the whole, Cyprian A is no more Greek than any of the others. The difference between Cyprian and Moabite M is very slight; greater kinship is claimed between Cyprian and Greek than Moabite and Greek because the long stroke of M is curved on the Mesha stone. But the Cyprian bowl has only two complete M's; of these one has a straight stroke, the other a slight curve, as seen in Carpenter's facsimile.<sup>4</sup> Furthermore, the

<sup>1</sup> Carpenter identifies san and sigma, which leads him to describe *shin* as "upside down" (from the Greek standpoint of course); see below p. 372, n. 3.

<sup>2</sup> P. 326.

<sup>3</sup> M. Lidzbarski, *Handbuch der nordsemitischen Epigraphik* I, 1898, p. 176. G. A. Cooke, *A Textbook of North-Semitic Inscriptions*, 1903, p. 52, repeats Lidzbarski's statement.

<sup>4</sup> The eighteenth character from the right, second on the third fragment from the right. The curve is much clearer in Lidzbarski's plate, from which Carpenter's illustration is taken.



N on this bowl has a curved stroke in several instances and shows that M, whose development parallels that of N, might more often have had this form if it had been used more frequently. As to Z, the one example of the Cyprian form is decidedly un-Greek, since the cross-strokes cut the vertical stroke, whereas the Ahiram Z is the absolute counterpart of the Greek. This leaves only the K, and even that is not so very different on the Mesha stone and the Cyprus bowl, if one selects the right examples from the former. To be sure, the K is vertical on the Cyprus bowl as in Greek; but that is a characteristic of Greek letters in general. Carpenter says nothing of the Cyprian D. In five out of six examples the right stroke is prolonged to form a kind of handle for a triangular banner. The significant point is that this characteristic does not occur in Greek but is regular in later Semitic. All told, the Cyprus inscription is un-Greek as compared with various earlier Semitic inscriptions in A, B, D, Z, H, Θ, I, N, *tsade* (san), Q,—especially D, Z, *tsade* (san), Q, as a glance at the Tables and our detailed discussion of the Greek letters will show.

Another Semitic inscription which Carpenter regards as having letters similar to early Greek is an eighth-century building inscription from Senjirli in North Syria (Table I, 15). G, E, K, L, M, N, O, R are said to be practically indistinguishable from early Greek. But forms just as close to Greek are found in the earliest Byblus inscription for G, E, L, N, O, R—indeed the E is closer. About nine of the fourteen examples of K have a late form which cannot have served as a model for the Greek. The M is no better than that on the Moabite stone. A, B, I, S, T, Carpenter says, are identical with those on the Cyprus bowl, and therefore are closer to Greek than those in earlier Semitic inscriptions, notably the Moabite stone. But A is slightly less like that of Greek, in having a long cross-stroke, like that on the Moabite stone, to which Carpenter objects; B is exactly like that of Byblus; I is the Byblian and later form, with the extra stroke; S is the same as in all earlier north Semitic inscriptions, from the Ahiram inscription down; T is in its tilt half-way between Ahiram and Mesha. Carpenter himself calls attention to the forms of Θ, *samekh* (xi), and Q as deviating from Greek<sup>1</sup> but does not mention the peculiar F (V) and D (like an R, as on the Cyprian bowl) or the un-Greek forms which he found so objectionable in the Moabite stone: curved L, M, N, alongside straight forms; Z with slanting bar; three examples of H with two bars but none with three. Nor are the tilted T and the un-Greek D and F (V) peculiar to this inscription: one can trace these forms in Semitic script from the eighth century down.

Carpenter also mentions briefly an inscription from Nora in Sardinia (Table I, 10), of which he says (p. 15):

We are justified in assuming that it was writings like this from Nora which the Greeks first saw and copied when they learned their alphabet.

But the Nora inscription has a B no better than Moabite, un-Greek, late Semitic D with a tail, a semi-recent M, and T shaped like a cross, as on the Moabite stone. Besides the inscription lacks seven letters, some of which are crucial. Add to this the fact that scholars now put this inscription in the ninth century, not the eighth as used to be assumed, much less the seventh as Carpenter suggests.<sup>2</sup> Carpenter ob-

<sup>1</sup> He is a little unfair to himself here: the *samekh* is not very different from the other early Semitic examples.

<sup>2</sup> See note on Table I.

jects to the earlier dating on the ground that K, M, N, and P have late forms. A glance at Table I disproves this: the K is like some examples of Moabite, the M is found at Samaria, the N and P occur in most earlier as well as later inscriptions. The fact of the matter is that we cannot really be sure of the date of the inscription on palaeographical grounds, though we can say that it must be earlier than the seventh century and that it seems quite at home in a ninth-century environment.

The seventh-century Nerab inscriptions (Table I, 16), which Carpenter says are written in an alphabet only slightly more advanced than that of Senjirli, have quite impossible forms of D, F (V), Z, H, K, M, *samekh*, so far as Greek borrowing is concerned.

After this negative discussion it is now time for an ordered, constructive presentation. Let us take the Greek letters in order, keeping our eyes on the Tables, and see just where these letters fit into the Semitic alphabet. These observations are based on letters written from right to left, as in the Tables. Particular attention should be devoted to the later Phoenician trend. Unfortunately, it is not possible to reproduce in Table I more than one alphabet after the seventh century, but the development indicated may be confirmed by a glance at the tables in Lidzbarski and Cooke. The point is that the earliest inscription showing a particular letter with a peculiarity that later becomes a marked characteristic not appearing in Greek is, roughly speaking, a *terminus ante quem* for the adoption of the alphabet by the Greeks. On the other hand, a peculiarity that remains an idiosyncrasy and does not develop into a trend is of no significance for our purpose. My meaning will be made clearer in the discussion of the individual letters.

A. The horizontal position, as already stated, is characteristic of all Semitic writing and is therefore of no significance for dating the borrowing of the alphabet by the Greeks. There is a difference between the earlier and later inscriptions in the length of the cross-stroke. This is relatively short in the early inscriptions but becomes longer at the beginning of the ninth century (6, etc.<sup>1</sup>), though there are sporadic cases of a short stroke later. Eventually the long stroke became so marked a peculiarity that we are justified in assuming that the Greek alphabet was borrowed before that peculiarity first makes its appearance, i.e., before the ninth century. The peculiar curved forms of the Ahiiram inscription (1) are probably due to the fact that the stonecutter was faithfully copying the flowing forms he found in his papyrus copy, as he did in other letters; at any rate, the influence of writing on papyrus is clear, and this form of A need not be regarded as the original. In fact, the Egyptian hieroglyph of the ox-head which is generally accepted as the prototype of A, does not have horns turning outward as in the Ahiiram inscription.<sup>2</sup> Dussaud<sup>3</sup> and Ronzevalle<sup>4</sup> (abandoning his former view) are presumably right in saying that there are no examples of A on the inscription which do not have a hook at the end of the bottom stroke though some of the reproductions seem to show a hookless form. Regularly the cross-strokes stop at the vertical line but in one instance (end of line 5 in

<sup>1</sup> The references throughout are to the columns of Table I (or II as the case may be).

<sup>2</sup> C. C. Torrey calls this A an ornamental variation (*J. A. O. S.* XLV, 1925, p. 275).

<sup>3</sup> *Syria* VIII, 1927, p. 185.

<sup>4</sup> *Mélanges de l'Université Saint-Joseph* XII, 1927, p. 9.

Ronzevalle's photograph) they clearly pass the vertical line and meet to form an acute angle, as in later inscriptions.

The Yehimilk (2) and Abibaal (4) forms are the closest to Greek, but still closer forms may have existed earlier. Dussaud, writing before the discovery of the Yehimilk inscription, thought that the Greeks must have borrowed the alphabet after the tenth century because their A is closer to that of Abibaal than of Ahiiram.<sup>1</sup> That argument is now nullified.

B. The most satisfactory prototype for most early forms of this Greek letter is one in which the bottom stroke is parallel to the base of the triangle which forms the upper part of the letter, or at least is horizontal. Such a form is more common in the earlier than the later Phoenician inscriptions—in fact, as good examples as any are to be found on the Ahiiram sarcophagus (1). The other form, in which the bottom stroke runs obliquely downward instead of horizontally to the left, becomes increasingly common with the ninth century (7–9) and eventually dominates. Thus in 7 and 8 almost all the examples of this letter are of the second type whereas in 2 only four out of ten have this form and in 1 none of the ten examples is of this type.

G. Both early Greek types (short and long left strokes) are represented in the earliest as well as in later Phoenician inscriptions—the one with short left stroke on the Ahiiram sarcophagus (1), the other in the Yehimilk inscription (2). But the vertical position of the first type, invariable in early Greek (except when the letter leans in the opposite direction from that of Semitic), tends to disappear in Semitic. Yehimilk alone has the rounded form which led to the development of our C, but this may be coincidence. While certainty cannot be reached on this point, reference to a period between the thirteenth and the tenth century accounts best for the Greek types.

D. Beginning with the ninth century (7, 9–11, etc.), the Semitic inscriptions reveal a tail to this letter. Even in the Yehimilk inscription (2) there seems to be one example of a rudimentary tail.<sup>2</sup> On the Samaria sherds there are about fourteen tailed to eleven tailless examples. This appendage entirely alters the appearance of the letter, leads to confusion with R, and becomes so prominent a feature that the tail may be said to wag the dog. It is necessary to assume that the Greeks adopted the alphabet before this development took place, as the Greek D never had such an appendage. The right-angled form of D found in early Greek is the one chiefly represented in the earlier Phoenician inscriptions but a form similar to the other early (and later) Greek form (isosceles triangle) occurs in the Gezer calendar. The beginning of the ninth century is the latest possible date for the Greek form of this letter.

E. In early Greek this letter has three main forms, according as the upright stroke 1) is bounded by the cross-strokes (like the modern E), 2) projects below the cross-strokes, 3) projects both above and below. The probable Egyptian prototype points to the first as the original.<sup>3</sup> This form is approximated only in the earliest Phoenician inscription (and in very late examples, much beyond the time of Greek borrowing).

<sup>1</sup> *Syria* V, 1924, pp. 150, 156.

<sup>2</sup> So the photograph appears to indicate but Dunand does not reproduce it so in his copy.

<sup>3</sup> For a discussion and reproductions of the probable Egyptian prototypes of the letters I refer to my earlier paper.

The third form also is found only early. The second form develops a rather long upright in Semitic beginning with the ninth century and, unlike most of the early Greek examples, looks like a three-stroked F (7, etc.). The slanting position becomes more frequent at the same time, whereas in earlier inscriptions as in Greek the upright position is more common.<sup>1</sup>

F. The earliest Semitic forms favorable to the formation of the digamma are found at Gezer (6, tenth century) and especially Samaria (7, ninth century). Later forms are less favorable. Before the discovery of the Samaria sherds the earliest examples of the Samaria form of *vau* were known only from the Siloam inscription of the end of the eighth century. This example, like many others, shows that as new material is discovered not only is the alphabet as a whole pushed farther back but individual forms of the letters undergo the same experience.

Z. The prototype of the early Greek form (like our capital I with short cross-strokes) is found in its closest form only in the Ahiiram inscription of the thirteenth century (1). In later Semitic the cross-strokes become longer than the upright. The slanting of the upright begins in the ninth century and leads at once to the modern form of Z. Whether the Greeks inherited this form or developed it independently is uncertain. Its absence in the earliest Greek inscriptions tends to confirm the second hypothesis. The Cyprus Z is found in fifth-century Greek (e.g., Ozolian Locris) and in Etruscan, beginning at an early period. Inheritance is possible, or later influence, but the rarity of the form in Semitic suggests independent development.<sup>2</sup> In any case, a very early borrowing of the alphabet is indicated by the commonest form of the letter in early Greek.

H. The three-barred form of this letter is almost universal in the early Semitic inscriptions. Often one or both of the uprights project above or below, but not always. The form without projections is typical in early Greek. It is not common after the tenth century in Semitic. In fact the tendency in Phoenician is for the lower parts of the uprights to be exaggerated in length. The two-barred form sometimes found in early Greek also occurs, though rarely, in early Semitic (2). The Marsiliana tablet (II, 10) has a four-barred variety. This comes closer than the other types to the Egyptian symbol for wall which I think is the prototype of this letter. The earliest example I have found in Semitic is in the Hadad inscription of the eighth century (12).<sup>3</sup> The reduction to the one-barred form in later Semitic and Greek may have developed independently. Since, however, it occurs as early as the seventh century in Semitic (16), it is possible that the Greeks imitated the Semites. It is not unlikely that there was continuing influence of Semitic on Greek as long as the two alphabets retained a general resemblance.

Θ. Beginning in the eighth century (12, 14) this letter became elongated in Semitic or developed other peculiarities. As the early Greek examples agree with those in early Semitic, borrowing in the ninth century or earlier is indicated. Most

<sup>1</sup> A four-stroked type occurs once at Samaria in the ninth century (not shown in Table I). A similar form is found in Boeotia and elsewhere (see W. Larfeld, *Griechische Epigraphik*, ed. 2, 1914, Pl. III) but there may be no significance in this fact.

<sup>2</sup> No other examples are to be found in the tables of Lidzbarski and Cooke.

<sup>3</sup> There is a possible example on the Cyprus bowl but I am inclined to think that the fourth bar is the result of damage.



of the early Greek examples have a cross, or plus sign, inside the circle, as in the Ahiram inscription (1), as against the X found on the Moabite stone (8), but the scarcity of this letter in the earliest Semitic material makes positive conclusions unsafe. So far as it goes, the evidence favors a very early borrowing.

I. This letter changed little in Semitic. One form is curved (1, etc.), another angular (6, etc.). The early Greek form lacks a stroke. The only Semitic parallels I have seen, except for occasional late examples, are in the twelfth-century Yehimilk inscription (2)<sup>1</sup> and on a Khorsabad seal of the eighth century.<sup>2</sup> Side by side with the three-barred form, early Greek exhibits one with four strokes, though not like the Semitic. This may be a purely Greek development but on the other hand it may be due to the desire to reproduce the Semitic form in a single stroke (with pen and ink). The most satisfactory prototypes for such an attempt are the Semitic examples which have a top stroke curving downward at the left and thus tending to form a loop; such forms occur only early (3, 5, 11). The second example in 7 shows how the Semites by a different method achieved a form made without lifting the pen. This form rather than the one I suggested may have led to the Greek type.

K. There are two forms of this letter in early Semitic; the one without a tail occurs only at Byblus,<sup>3</sup> the other with a tail never occurs there.<sup>4</sup> This mutual exclusiveness tends to show that the tailless form, though perhaps not a Byblian invention, lasted there as a local peculiarity. The Greek letter is based on the tailed form, found in the earliest non-Byblian inscriptions (6-10). In the eighth century the Semitic K begins to take on shapes which cannot have been the prototypes of the Greek letter (12, 14-18). The ninth century furnishes the best prototypes, but we must not forget that, if we are right in calling the Byblus form a local peculiarity or relic, we have no material antedating the ninth century. See also under chi.

L. Nothing can be determined from this letter as to the date of the Greek borrowing.

M. The vertical form of this letter found at Byblus (1, 2, 4, 5) and Gezer (6) cannot be the earliest for if anything is certain about the origin of the alphabet it is that M is derived from the Egyptian water sign, which is always horizontal. We must explain the situation by assuming that the vertical type was introduced early as a variant but never drove out the original horizontal form (except perhaps at Byblus) and that eventually the original style triumphed.<sup>5</sup> Therefore there is no significance in the fact that the earliest Semitic example with which the Greek form agrees is in inscriptions of the ninth century and later. When additional inscriptions of an earlier period are found, especially if they come from some place other than Byblus, we may expect them to have the horizontal M.

The peculiar form of the later Semitic letter,<sup>6</sup> which Lidzbarski calls a shibboleth

<sup>1</sup> Three out of seven examples of I have this form, as both the photograph and the copy given by Dunand attest.

<sup>2</sup> M. Sprengling in *Amer. Jour. Sem. Lang.* XLIX, 1932, p. 54.

<sup>3</sup> If we consider the script on the Roueisseh arrow as Byblian. There is no way of telling where the arrow originated. Roueisseh is southeast of Sidon.

<sup>4</sup> At one point in the Ahiram inscription the photographs in Montet and Ronzevalle and the latter's copy show a tailed form but as neither comments on it, the probability is that the tail is an accidental mark on the stone. A fresh examination would be worth while.

<sup>5</sup> Torrey, *loc. cit.*, calls the vertical type a local peculiarity.

<sup>6</sup> The form in 18 is not the most advanced type, for the short upright descends only to the curve and does not cut through it.



for the dating of Semitic inscriptions, begins to be found in the seventh century but embryonic forms make their appearance much earlier, as in 7 (second form), 10, 12 (second form), 14 (second form), 16 (first form), 17. The Greek form, which shows no sign of this development, was therefore borrowed in the ninth century or earlier.

N. In early Greek the long vertical stroke usually goes as high as the short one. In Semitic this is not exceedingly common at any period; the most striking examples belong to the ninth and eighth centuries (7, 8, 13). It occurs rather frequently in the first of these. But even in the Greek alphabet the short stroke is sometimes higher (II, 7, 9, 10).

Ξ (xi). The original Semitic form of this letter, borrowed by the Greeks, begins to give way to a newer form in the ninth century (7), though examples of it persist even into the seventh. I know of no Semitic form resembling the Etruscan.

O. This letter has no particularly characteristic features.

P. In Semitic we find two forms, curved (1, 2, etc.) and angular (7, 8, etc.). Only in the earliest inscription (1) do we find wide sweeping curves in this letter; elsewhere the curve is narrow and forms a hook. The well-rounded Greek letter is best derived from a style like that of 1. The two-angled Greek type was of course developed out of the full curve. The C-shaped Cretan form (4, fifth example) is particularly close to the Ahiram type (1). So far as it goes then, the evidence favors a very early borrowing.

San. Semitic forms with a short left stroke such as those found in the tenth and early ninth century (6, 7) gave rise to the Greek san. The Samaria examples (7) are particularly significant. After the tenth century this left stroke becomes longer (8-18) though types similar to the Greek are found on seals<sup>1</sup> and very late coins.<sup>2</sup>

Q. In the ninth century (7) this letter takes on a form that becomes regular in later Semitic but is unlike the Greek. The chances are therefore that the Greek borrowing took place before the ninth century.

R. Nothing of great significance is revealed by this letter. In Semitic the tailed D came to look like R; in Greek the reverse took place: the development of a tailless R led to a form like D. No such form exists in Semitic and we may look upon it as a purely Greek evolution. In general, the early Semitic forms have shorter tails than the later, though the shortest tail is not found until the ninth century (10).

S. The Greek letter was derived from a Semitic form in use down to the seventh century. But even before that we note a tendency to compress the letter laterally, especially the two middle strokes. These strokes eventually coalesce into a form similar to the western Greek chi. The compression is particularly noticeable in 7, 9, 12 (not all the details are revealed in this table). Though the matter is scarcely susceptible of proof, a period before the ninth century is slightly more satisfactory for the Greek adoption, since neither the full-fledged late form nor its embryonic predecessor could have served as a model for the Greek.<sup>3</sup>

T. The perpendicular upright and horizontal cross-stroke of the Greek letter

<sup>1</sup> Dussaud, *Syria* VI, 1925, p. 329, Col. 3, for a seal of about 750 B.C.

<sup>2</sup> Lidzbarski, *op. cit.*, I, p. 185, II, pl. XLVI (second century and later).

<sup>3</sup> How Carpenter can say "that there can be no doubt that san and sigma are variants of the same Semitic prototype" (p. 28, n. 2), I do not see. Rather the presence in the Etruscan abecedaria of separate forms in their proper Semitic positions shows that there is no doubt that the contrary is true.

favor a type like that in 1 as the prototype. On the other hand, the length of the upright suggests later Semitic types, though the tendency in these is to exaggerate the length. If we are generous we can say that the decision is a draw between early and late adoption by the Greeks.

Y. Like digamma, this letter is derived from Semitic *vau*. It could not possibly be descended from the Semitic types current in and after the eighth century. The nearest forms are those on the Gezer calendar (6), though one of the Ahiram examples is not very remote (1, fourth example).<sup>1</sup>

X (xi), Φ. Uncertainty as to the origin of these letters makes it impossible to use them in determining the age of the Greek alphabet.

Ψ (chi). The origin of this letter remained obscure until the discovery of the Ahiram inscription. Before this was found and correctly read the Abibaal inscription had been wrongly read and dated because the *kaph* (K) had been read as *shin* (S), which took on a form like Byblian *kaph* in the seventh century. In exactly the same fashion Carpenter, ignoring the Byblus evidence, derives the Greek chi from the late *shin*. But just as we must now read the Byblus letter as *kaph*, not *shin*, so we must refer the Greek chi to the earlier Byblian *kaph*, not the later *shin*. There is no reason in the world why a totally unrelated letter like *shin* should have served as prototype for chi (*kh*); there is every reason for seeing the origin of chi in a form of K.<sup>2</sup>

Besides the chi which is exactly like Byblian *kaph* there is a tailed form intermediate between this and kappa. The Marsiliana abecedarium of 700 B.C. has such a form (II, 10). As this form can certainly be no earlier in Greek than the tailless form,<sup>3</sup> it is obvious that the tailless Greek chi existed long before the Semitic *shin* in the late seventh century by chance developed an identical shape. It would seem that the locality which gave its alphabet to the Greeks at an early period used both forms of *kaph*—tailed and tailless. That period would certainly be before the tenth century.

We may perhaps see in the use of Ψ as ks in Thera and Melos a transitional phase between the original (western) kh and the eastern ps. People in the region of the so-called eastern alphabet who already had a xi (derived from the Semitic *samekh*) would naturally not need the new character for that purpose and may have been led to adopt it for ps by the nearness of that combination to ks.

Summarizing these data we arrive at the following conclusions:

- Before XIII c.: possibly E, H.
- XIII c.: Z, P.
- XIII–XI c.: H, chi.
- XIII–X c.: B, G, D, E, Q, S, Y.
- XIII–IX c.: Θ, Ξ, R.
- XII–X c.: A.
- XII–VIII c.: I.
- X–IX c.: F, san.
- IX c.: K, M, N.

<sup>1</sup> I should call attention however to the resemblance of the third example in Table II, 3, to the third in Table I, 16. This I regard as pure coincidence (or later influence) as the form is not common in either Semitic or Greek. <sup>2</sup> *Class. Phil.* XXII, 1927, pp. 136 ff. <sup>3</sup> It is in fact usually considered later.

We must remember that this summary represents the latest, not the earliest possible dates. The finding of additional old inscriptions cannot cause the lowering of the limits but may raise them. Just as the Samaria finds pushed the Greek type of F back from the end of the eighth century (Siloam inscription) to the beginning of the ninth, as the discovery of the Ahiham sarcophagus identified Greek V (chi) with the Semitic *kaph* of the tenth century or earlier instead of the *shin* of the seventh century and later, as the Yehimilk inscription proved that the prototype of the Greek A existed in the twelfth century and was not the tenth-century development which Dussaud supposed, so the finding of new inscriptions may reveal a still earlier example of Greek F, K, M, N, etc. Furthermore, if in my zeal to establish my point I have, in the opinion of some, erred in emphasizing the antiquity of some characteristics, I have, I think, atoned for my error in being more than generous in other respects. Thus in the summary I have listed three Greek letters as best represented by prototypes as late as the ninth century, but in the preceding discussion I made the point that M must antedate the thirteenth-century examples and that K was probably much earlier than the ninth century. As to N, it is a question whether the trait used as a criterion is significant.

We can perhaps make the results more impressive by putting them in another way. Let us compare, from the Greek point of view, the two earliest Semitic inscriptions with the Moabite stone and with the two Semitic inscriptions which Carpenter thinks are most like Greek. I am not including some of the weaker evidence favoring my view.

Ahiham (1) is worse <sup>1</sup> than Moabite (8) in A, K, M, N; better in B, Z, H, T.

Ahiham (1) is worse than Cyprus (13) in A, K, M; better in B, D, Z, H, Θ, *tsade*, Q.<sup>2</sup>

Ahiham (1) is worse than Senjirli (15) in A, K, M; better in D, F, Z, H, Θ, Q.

Yehimilk (2) is worse than Moabite (8) in K, M, N; better in A, B, Z, H, I.

Yehimilk (2) is worse than Cyprus (13) in K, M; better in B, D, Z, H, Θ, I, *tsade*, Q, and probably would have been in F, if represented on 13.

Yehimilk (2) is worse than Senjirli (15) in K, M; better in A, D, F, Z, H, Θ, I, Q.

We must also take into consideration the bearing of the south Semitic script on the question of the age of the Greek alphabet. The earliest inscriptions in this script are variously dated by scholars. Some trace the script to a proto-Semitic alphabet, some to north Semitic (Phoenician), some to Greek. Though we need not concern ourselves here with this question we must point out that in some letters the early south Semitic inscriptions resemble Greek rather than Phoenician. Most striking are the similarities of L, upside down, from the original point of view,<sup>3</sup> and of S in a vertical position. The I similar in form to Greek koppa confirms my suggestion that a form with closed or nearly closed loop was the prototype of Greek I (see above, p. 371). If the South Semitic script developed out of Greek, the latter must have had

<sup>1</sup> I.e. as a prototype for Greek. Ahiham would certainly not be worse in the three letters not represented in the inscription.

<sup>2</sup> The three letters missing in 1 do not affect the result. On the other hand, one of the three letters (F) missing in 13 probably would have an un-Greek form if represented.

<sup>3</sup> The original position is found in some Greek alphabets (I, 9-11).

a wide vogue at an early period. But if we reject this view (as I think we must), south Semitic must have branched from an early form of Semitic similar to that which was the prototype of Greek. In other words, the south Semitic alphabet is evidence for the belief that the Greek alphabet was borrowed early—well before 700 B.C.

The relation of south Semitic to Greek is brought into a clearer light by an inscription found at Ur.<sup>1</sup> Archaeological evidence makes the reign of Nebuchadnezzar (604–561) the lower limit, but Burrows suggests a date as early as the tenth or ninth century. Another inscription which on palaeographical grounds must be earlier may refer to a king of the early twelfth century, though this is quite uncertain. The alphabet in these inscriptions is intermediate between Phoenician and later south Semitic and confounds the skeptics who refuse to see in south Semitic any evidence for the original Semitic forms. B has a form similar to Greek P (of the type seen in II, 7), as do later south Semitic inscriptions, and serves to explain the Theran and Cretan forms of B (II, 3, second example; 4, first example).<sup>2</sup> G is the north Semitic and Greek form, as in I, 8. D has the two forms familiar in north Semitic and Greek (I, 5, 6). I already has the regular south Semitic form and confirms what was said above about the Greek letter. L has the Semitic position in one inscription (occasionally found in Greek, as in II, 9–11), the regular Greek position (in its later form, like the G of II, 4) in the other.<sup>3</sup> N is like the Greek, more particularly in respect to the shortness of the right-hand stroke (I, 1, third example).

It is possible that another argument in favor of an early borrowing of the Greek alphabet may be found in the remarkable forms of certain early Greek letters which resemble the assumed prototypes of the Phoenician characters. This evidence must of course be used with caution and may be entirely without value. In my previous paper I said:<sup>4</sup>

The remarkable form of the early Corinthian beta ( $\sqcup\Gamma$ ) is exactly that of another Egyptian house symbol (phonetic value *mer*). Whether there is any significance in this fact I cannot say.

Recently Mentz has gone even farther.<sup>5</sup> He argues that this and most of the other early forms of beta could not have been derived from the Phoenician form that we know but must come from a primitive  $\sqcup$ , as found in Egyptian hieroglyphs. He makes a similar argument about D, though one must confess that it is rather weak. Another matter for speculation is whether the koppa found at Abu Simbel in the form Q is an inheritance from the Egyptian loop symbol which may be the prototype of koppa. The position of Greek L is not only like that of south Semitic as already noted, but also like that on the Sinaitic inscriptions. I have already suggested that the four-barred H of the Marsiliana abecedarium comes closer to the presumed Egyptian original of that letter than the three-barred examples in the earliest Phoenician inscriptions, that the form of Greek E which eventually triumphed also is closer to the supposed Egyptian prototype, and that the Greek (and later Semitic) M is closer to the Egyptian than is the Byblian variety.

<sup>1</sup> E. Burrows in *Jour. Royal Asiatic Soc.* 1927, p. 795.

<sup>2</sup> These Greek types are therefore not modified forms of P.

<sup>3</sup> There is some doubt about the identification of this letter.

<sup>4</sup> P. 315, n. 2.

<sup>5</sup> *Phil. Woch.* LII, 1932, p. 1270.

So much for the Semitic side. Let us pass to other considerations. The persistence of Cretan script on the Greek mainland until at least 1200 B.C. is no argument against an early introduction of the Phoenician characters. The two scripts may well have existed side by side for some time or the alphabet may have been introduced after the end of the Mycenaean period. And there is no reason to suppose that the month or year after the alphabet was introduced it was employed by all literate Greeks. Not even today do events move that fast. Our greatest trouble lies in explaining the lack of inscriptional material of any kind between 1200 and 700. Does this lack mean that the Greeks were illiterate during that period except in communities in which the Cretan script lasted somewhat longer? But the *argumentum ex silentio* is even more dangerous in archaeology than in philology. The absence of early alphabetic inscriptions may mean several things:

1) Merely that they have not yet been discovered, just as a few years ago we knew of no Semitic inscriptions earlier than the ninth century.

2) That they have all perished.

3) That alphabetic writing was at first confined largely to papyrus.

As a matter of fact there is ancient testimony to the existence of early inscriptions. It is true that not all of it is trustworthy. Even when the ancient writers are themselves reliable they may have been deceived by forgeries. Perhaps the most convincing testimony is that found in Herodotus (V, 59 ff.), who tells of seeing inscriptions in the temple of the Ismenian Apollo at Thebes. These can hardly have been in the Minoan script used in many inscriptions found at Thebes, for Herodotus not only calls the characters Cadmean but states that most of them resembled Ionian. Herodotus would scarcely have made these comments if the inscriptions had been carved as late as the seventh century.<sup>1</sup> That Herodotus quotes the inscriptions in classical Greek hexameters does not prove him a liar (it is no longer fashionable to make this charge). The inscription might well have dated from the ninth century and been modernized by Herodotus or his later editors. It is rather probable that these inscriptions are the very ones which Aristotle (*Mirab.* 133) credits to this same temple in Thebes and which assisted in the decipherment of a similar archaic inscription found in Thessaly. The successful elucidation of these inscriptions argues for alphabetic rather than Cretan characters.<sup>2</sup>

As to the dating of the earliest extant Greek inscriptions in the seventh century, I will not press the point that many scholars are rebelling against Kirchhoff's extremely conservative position and are inclined to date some of them at least a century earlier. At any rate, as between this possibility and the ancient testimony, which cannot all be summarily dismissed, the gap between the twelfth and seventh century is partly filled.

Mrs. Stillwell's article appeared after the completion of my paper.<sup>3</sup> It throws wide open the whole question of the dating of the earliest Greek inscriptions. The major contribution of this important article is that it reports newly found Corinthian

<sup>1</sup> At any rate he makes no such comments on sixth-century inscriptions, such as those on Croesus' offerings at Thebes (I, 51; 92).

<sup>2</sup> For other ancient testimony to early inscriptions see Larfeld, *op. cit.*, p. 190.

<sup>3</sup> *A. J. A.* XXXVII, 1933, p. 605.



inscriptions which can be positively dated on archaeological grounds between 750-725 B.C. More than that, the writing is not in the oldest Corinthian style. The direction of writing is from left to right, G already has the shape of the rounded C, the B-shaped E is rounded. With relation to the Greek alphabet as a whole, let it be noted that this Corinthian script already has a chi.

To say that the writing on the Corinthian vases belongs to the sixth century and that the archaeological criteria for dating such vases are incorrect, is to beg the question. How can we date early writing except by archaeological evidence?

That is not all, for the evidence continues to pile up. There are the twenty inscriptions from Hymettus, published by Blegen.<sup>1</sup> These he attributes to the middle of the eighth century, on the evidence of the geometric vases on which they are scratched. These too display a more advanced style of writing than the inscriptions which have hitherto been assigned to the seventh century. Only nine read from right to left; I is always a straight vertical line; phi and chi both occur. Certainly the beginning of the eighth century, or more probably, the end of the ninth, is the proper date to which to assign the earliest extant Greek writing.<sup>2</sup>

Furthermore we may well admit that in the dark ages preceding the seventh century there was a dearth of inscriptions as of other material expressions of civilization. Carpenter himself says that the people of the ninth and eighth centuries were "demonstrably devoid of monumental architecture, sculpture, painting, and most of the minor arts" (p. 29). But we need not conclude that they were also illiterate. In the history of writing we find many peoples who could write but have left no considerable architectural or sculptural remains. The alphabet may well have been in a period of incubation for several centuries.

Carpenter maintains that "it is an idle evasion to imagine that earlier writings must have existed but perished because they were confined to papyrus and parchment."<sup>3</sup> He points to the Phoenician inscriptions of earlier centuries which are on stone and metal. But even the earliest of these inscriptions show in the forms of their letters the result of a long evolutionary process of writing on papyrus with pen and ink, as Semitic scholars are fond of pointing out. Furthermore, the rolls of papyrus brought to the king of Byblus in Phoenicia by the Egyptian envoy, Wenamon, in the twelfth century must have been intended for writing purposes in Phoenicia or in the lands to which Byblus exported, among which Greece would be the most likely. And it is worth while to recur here to the important point made by Breasted<sup>4</sup> that the Greeks must have taken the word *βύβλος* for papyrus from the name Byblus at a time when this city was still a leading port of Phoenicia. This probably points to the twelfth century, if not earlier, before Sidon and Tyre became the important Phoenician trading centers. The whole story of Byblus hangs together remarkably well. It had important relations with Egypt from early times because it was the port for the exportation to Egypt of Lebanon cedar, of which the Egyptians were very fond. In return Egypt sent its wares, such as papyrus, and Byblus became a dis-

<sup>1</sup> *A. J. A.* XXXVIII, 1934, p. 10.

<sup>2</sup> Some of the earliest Phrygian inscriptions which must date from the eighth century reveal an advanced Greek alphabet. I hope to return to this point at a later occasion.

<sup>3</sup> It might be pointed out in passing that parchment, in the strict sense of the term, did not exist at the time.

<sup>4</sup> *Amer. Jour. of Sem. Lang.* XXXII, 1916, p. 249.

tributing center for papyrus and other Egyptian products. Furthermore if Hesiod in the ninth century could speak of wine from Byblus<sup>1</sup> it is all the more likely that he was acquainted with the papyrus which Byblus exported and which received its Greek name from the city which sent it to Greece.<sup>2</sup> It is no answer to say that Hesiod lived much later than the ninth century. Whether he lived early or late the expression Byblian wine must have originated when Byblus was still a flourishing trade-center.

Another argument of Carpenter's against an early borrowing of the Phoenician letters by the Greeks is introduced by these words: "We may reply with the full confidence of modern archaeological knowledge that there is no evidence for any Phoenician contact with the Aegean in the second millennium." The evidence he presents does not justify so extreme a statement. We may grant that the Phoenicians did not carry on any extensive colonizing in that early period. But the very slightest contact of a Greek of ordinary intelligence with the wonderful Phoenician alphabet might have been sufficient to cause him to adapt it to his own language. Carpenter uses practically the same argument as this when he comes to the Etruscan adoption of the Greek alphabet (p. 20):

In other words, writing commences in Etruria at about the same time that its occurrence can be established in Greece. This would be a strange coincidence if the Greeks had known how to write for several centuries (even if we made every allowance for the fact that the Greeks were not in regular contact with the Etruscans before the eighth century); while it would be precisely what we should expect of so exciting and marvellous an accomplishment in Greek hands if the art had only lately been acquired.

One might almost substitute "Phoenician" for "Greek" and "Greek" for "Etruscan" in this quotation. The slight contact between Phoenicians and Greeks necessary to assure the borrowing of the alphabet must of course have existed. Meyer, in speaking of the Egyptian domination of Syria in the second millennium, says that there is no doubt that for a long time the Phoenicians had conducted a lively commerce with Egypt, Cyprus, and the Aegean.<sup>3</sup>

<sup>1</sup> *Erga* 589.

<sup>2</sup> Carpenter ignores the etymology of βύβλος and suggests that the Greeks got their papyrus from the Delta of Egypt after 650 B.C. The foreign (possibly Egyptian) word πάπυρος was perhaps introduced when the Greeks began to get their papyrus direct from Egypt.

<sup>3</sup> *Op. cit.*, II, 1, 1928, p. 98. Cf. Giles in *Cambridge Ancient History* II, 1924, p. 27: "There is no reason to doubt the statement of the ancients that there were Phoenician settlements in Greek lands, the most famous that of Cadmus in Thebes. But the Phoenicians were a trading people who did not establish permanent colonies in Greece, but only stations in which to gather the wares in which they traded"; and E. A. Gardner, *ibid.*, III, 1925, p. 375: ". . . the discovery at Eleusis of late Minoan tombs which contained Egyptian faience ware and Phoenician imitations of Egyptian scarabs. These articles can hardly have been brought to Attica in other than Phoenician vessels, so we need not doubt that Phoenician merchants visited its shores." Carpenter would presumably reject the "Phoenician imitations," and the "Phoenician vessels," for he makes the sweeping statement (p. 17) that "no Phoenician objects have been found . . . in the Aegean basin in an environment earlier than the eighth century." Cf. too W. F. Albright in *Jour. Pal. Or. Soc.*, V, 1925, p. 83: "After the discoveries at Byblos, proving the close connection existing between Phoenicia and the Aegean in the Middle Bronze Age, there is no difficulty in carrying back the origin of the Greek forms of these names [Tyre and Sidon] to the beginning of the second millennium." Martin P. Nilsson, *Homer and Mycenae*, 1933, p. 134, believes that the Phoenicians began to develop their trade in the eleventh century and reached Greece in the tenth. The evidence that he adduces does not preclude a date as early as the twelfth or even earlier.

Between the introduction of the alphabet into Greece and the earliest extant inscriptions many developments took place. The assumption that the alphabet was not introduced until 700 B.C. reminds one of a hothouse which accelerates the growth of plants: In no time at all the letters changed their shapes, Semitic *vau* split into consonant digamma and vowel upsilon, the added letters were invented, the so-called western and eastern alphabets were differentiated. Truly the Greek climate does miracles to a young alphabet; we can almost see it growing. It is no wonder that Carpenter sets forth a "schedule" for its development. Everything has to move on schedule if it is to be accomplished.

But to come to Etruscan, where we find evidence that all by itself completely annihilates the theory of a late origin of the Greek alphabet. Carpenter makes no mention of the Marsiliana alphabet, or abecedarium, scratched on the edge of a writing tablet; it was first discussed in detail by Grenier in 1924.<sup>1</sup> This Etruscan alphabet is assigned by scholars to about 700 B.C. on the basis of the archaeological evidence of the tomb in which it was found. Until arguments against this dating are adduced we must accept it. This Etruscan inscription, which, by a curious coincidence, scholars assign to the very date to which Carpenter attributes the introduction of the Phoenician letters into Greece, reveals a completely developed Greek alphabet, with a full panoply of added characters. Allow only a few years for the borrowing of the alphabet by the Etruscans from the Greeks, a few more for the invention of the added letters, and only a few score for the development of such forms as B, D, I, and we reach a period well back of 700. Such a development ought to have taken several hundred years at least. Just as the discovery of new Semitic inscriptions not only pushed back the invention of the alphabet but also made possible the assumption of its earlier adoption by the Greeks, just so the finding of this Etruscan inscription has confirmed the theory of an earlier date. For an eighth-century Etruscan alphabet is bound to presuppose a still earlier Greek alphabet, since no one can question the Greek origin of Etruscan writing.

The supposed lack in antiquity of Greek written records before the seventh century is no support for the theory of a late origin for the Greek alphabet. We may grant that records were scarce as compared with the seventh century without denying their existence entirely. Nor is there any validity in the argument that the fact that the laws of Lycurgus, which originated about 800 B.C., were unwritten proves that writing did not exist at the time. "As no lawgiver would neglect the obvious permanence attaching to inscribed tablets of stone," Carpenter argues that the Sparta of Lycurgus' time was illiterate. But we need merely recall that Rome had only unwritten law until the Twelve Tables were compiled in the middle of the fifth century and that the patricians administered it to their own advantage. They found that their hold on the government was greatly strengthened by the absence of written laws, and it was only through plebeian insistence that a written code was finally adopted. In spite of the absence of such written laws, we have Latin inscriptions a century or two older, as that on the Praenestine fibula of the seventh or sixth century and the Forum inscription of the sixth century or earlier. In the same way the

<sup>1</sup> *École française de Rome* XLI, 1924, p. 1; first published by A. Minto, *Marsiliana d' Albegna*, Firenze, 1921, p. 122. See Table II, 10.

absence of reliable records for almost all eighth-century Greek events is paralleled by identical absence of records of early Roman history.

As to Homer, we fortunately do not need to solve the Homeric question in answering the implication that Homer could not write. If we take the traditional view about Homer and his date, we shall be satisfied with Kenyon's argument that poems on such a scale could not have been produced without the assistance of written books.<sup>1</sup> Kenyon believes that rhapsodists memorized the poems but used written copies in doing so. To quote:

Now that the general antiquity of writing in the world of the Homeric age is established, it is impossible to maintain that writing was practised in the Greek lands in the seventh and eighth centuries, but could not have been known in the ninth, or even earlier. The basis for the old belief is cut away.

If, on the other hand, we are dissatisfied with this view and believe that the Homeric poems passed through a long period of oral tradition and that they were copied down at a relatively late date, we are not forced to the conclusion that Homer could not write. As Nilsson says, "The old question whether the art of writing was known at this time seems to me to be almost irrelevant; it was perhaps known, but was certainly not used to write down an extensive poem."<sup>2</sup> Not to mention other justification for the view that the oral production and transmission of poetry does not prove the non-existence of writing, I mention merely the oral epic poetry of modern Serbian, produced in the midst of a fairly diffused alphabetic script.<sup>3</sup> I can only conclude that alphabetic writing was available to Homer and still earlier poets if they cared to make use of it.

Apart from Homer, there is Hesiod. To be sure it may be argued that he lived later than generally supposed. But whether he lived early or late, it is hard to see how Kenyon's argument that Hesiod's work must have been written down by its author, can be answered (p. 14):

Can we suppose that there would have been much of a public for the *Works and Days*, with its combination of a purely personal quarrel with agricultural precepts? It seems to me incredible that such a poem should have survived unless it had been written down, whether on lead, as shown to Pausanias on Helicon, or in some other fashion.<sup>4</sup>

All the signs, then, so far as I can interpret them, point, not to the late eighth, but to the eleventh or the twelfth century or even earlier, as the time for the introduction of the alphabet into Greece. But we are indebted to Carpenter for one thing: though the facts that he presents do not prove his point, they do suggest an interesting thought. The alphabet was brought to Greece either toward the end of the Mycenaean period or during the dark ages which followed its end. In those centuries it was probably not widely used and had a slow development. The reawakening which began in the eighth and seventh centuries augmented intercourse among the Greek states, expanded commerce, and produced a literary awakening. All this resulted in a great increase in the use of writing, and in a rapid evolution of its form. But these

<sup>1</sup> *Op. cit.*, pp. 11-16.

<sup>2</sup> Martin P. Nilsson, *Homer and Mycenae*, 1933, p. 210.

<sup>3</sup> So too Parry in *Harvard Studies* XLI, 1930, p. 79.

<sup>4</sup> It may be significant that the number of repetitions is smaller in the *Works and Days* than in the *Theogony* or in Homer; cf. Parry, *op. cit.*, p. 90.

new developments are no proof that alphabetic writing had not existed much earlier. As with the coming of the sun the stars fade away, so the earlier civilization was dimmed by the splendor of the new. In all ages we can see the influence of large movements on writing; we may recall the Carolingian Renaissance of the ninth century A.D., the twelfth-century movement, the rise of the universities in the thirteenth, the Italian revival of learning in the fourteenth and fifteenth. All these stimulated both the growth and the spread of writing.

B. L. ULLMAN

UNIVERSITY OF CHICAGO



## METALLURGICAL FALLACIES IN ARCHAEOLOGICAL LITERATURE

IF A mineral technologist, in undertaking to review for a group of his colleagues the historical background of mineral technology, consults the abundant literature of archaeology in search of illustrative material, he is likely to be surprised and perhaps shocked by some, at least, of the statements which he finds in books and articles that seem to be accepted in the archaeological field as reliable and authentic. He finds ancient workers credited with knowledge that they could not possibly have possessed, producing results that could not have been attained by the methods described, and the language of technology, which has attained a definiteness of meaning akin to that of law, used with a looseness that confuses or perhaps annoys him. The result is that mineral technologists are much less familiar with the history of their art than they should be, while archaeologists, in presenting the results of their researches, fall into errors that could easily be prevented if they were more familiar with what our present metallurgical and mineralogical knowledge demonstrates must have been the conditions of the past. What is to follow is essentially a plea for better coöperation between archaeologists and mineral technologists in the search for truth regarding man's early history. This plea will take the form of a brief recital of some of the evidence showing the need for such coöperation.

### MELTING AND SMELTING

The two words melting and smelting may serve as examples of looseness of language. Their meanings are definite and distinct. Melting is a physical change; a solid is converted to a liquid by the use of heat. Smelting is a chemical change; one mineral substance is converted into another by the aid of heat. Because the final result in both cases is usually a liquid metal or alloy, and heat is used in both cases, a quite unnecessary confusion of operations that are basically different has arisen. Thus one finds references to the smelting of gold. Gold occurs only as native metal (there are rare exceptions, quite unknown to the ancients) and therefore it cannot possibly be smelted. When gold occurs in association with lead or copper ores it may be recovered in smelting the lead or copper minerals; indeed the object of smelting the lead or copper mineral may be to recover the gold, but the gold was native metal at the beginning of the process and remained so to the end. Iron ore, on the other hand, may be smelted without melting the resulting metal, as is explained in more detail later.

It is generally agreed that gold and copper, which occur as native metals, were the ones first used by man. Native metal is still practically our only source of gold, but primitive metallurgists eventually learned how to produce copper from minerals that were obviously not copper. Between the first *use* of metal and the first *making* of metal from something that was not metal many thousands of years probably elapsed. During this period melting was done but no smelting. Large lumps of gold are rather rare and the particles normally found are not infrequently so small

that a million of them weigh less than an ounce. Large lumps of copper are more common, but it is obvious that primitive recovery operations would yield more particles that were too small for any practical use than they would of lumps of usable size. The blow-pipe is an ancient device and both gold and copper could easily be melted with it. The ancients developed great skill in its use; the goldsmiths of Ur soldered gold beads with pure gold.<sup>1</sup>

Various fantastic explanations<sup>2</sup> have been offered for the origin of copper smelting; the curious thing is that no one seems to have put forward the most rational and fairly obvious possibility. The Egyptians were the first great users of copper in historic times; how far they go back in prehistory I am unable to venture an opinion. It seems unquestionable that their first source of supply consisted of lumps of native copper that were large enough to use, and that later they melted smaller particles to form a cake of workable size. They did not trouble to separate the copper particles from adhering minerals, depending on the melting to effect the separation. The melter would be astute enough to notice that the final cake appeared to contain more copper than seemed to be in the original material, and to observe also that the adhering mineral had suffered a change during the melting operation. He would thus be led to try the effect of heat on the mineral, and be rewarded, in some cases, by obtaining metal from what was obviously not metal. Thus smelting was, most probably, a logical and natural outgrowth of melting operations, not a chance discovery, as nearly all the literature on the subject assumes. This important discovery was undoubtedly made independently in different parts of the world at different times; whether the first man who engaged in smelting was an Egyptian or not does not matter, for even if it had been done in earlier ages the Egyptians undoubtedly were led to the discovery in the same way as their predecessors.

As soon as it was learned that metal could be made from mineral by the aid of heat, all sorts of minerals would naturally be tried. One of them yielded a new metal, not found in nature, lead, and another, tin, also a new metal. These two melted at such low temperatures that their usefulness was immediately recognized. Still other minerals yielded iron, but it could not be melted by any means available to the ancients and a long time must have passed before they discovered that by heating and hammering it they could cause small pieces of it to weld into a usable mass.

#### IRON PRODUCTION

The early history of iron seems to present much difficulty to archaeologists. They are aware that iron oxides are quite common minerals, and that the oxide can be reduced to the metal, in the presence of carbon, at a temperature lower than that used in the melting of copper or gold. From this some jump to the false conclusion that iron should be more easily produced from its ores than copper. If they understood the meaning of the phrase "carbon monoxide-carbon dioxide equilibrium ratio" they would have no difficulty in seeing why such a conclusion is unwarranted.

<sup>1</sup> E. A. Smith, *Discovery*, 1930, p. 20.

<sup>2</sup> G. Elliot Smith, *The Ancient Egyptians*, 1923, p. 10; *Human History*, 1929, p. 304; Norman Ault, *Life in Ancient Britain*, 1920, p. 115; W. J. Perry, *The Origin of Civilization*, p. 35; H. F. Cleland, *Our Prehistoric Ancestors*, 1928, p. 202; *Nature*, Sept. 18, 1926, p. 411.

To produce copper or lead all that is essential is a mixture of sulphide and oxide minerals (commonly found associated) and heat. The fuel used may be simply a source of heat, and does not have to enter into the chemistry of the reaction. As a matter of practice it does, for in most attempts to apply heat to an oxidized ore of either copper or lead it would be difficult to prevent the carbon from acting to reduce the oxide, while it is not hard to modify the effect of a flame so that sulphides are first oxidized and then reduced. But my point is that flame and carbon control is not essential (though usually used); metal can be made from a mixture of sulphide and oxide ores of either copper or lead by the use of heat alone.

With iron the case is quite different. No amount of heat alone will reduce a mixture of iron oxide and iron sulphide to usable metal. When iron sulphide alters to oxide in nature, the reaction commonly proceeds to the end, and a natural mixture of iron sulphide and iron oxide is much less common than a natural mixture of sulphide and oxidized ores of copper or lead. Furthermore, iron sulphide is so soluble in the metal and makes it so brittle that usable iron could not be produced in this way, even if it were otherwise possible. To produce usable iron the metallurgist must employ only iron oxide together with both heat and carbon, the latter performing an essential chemical function in the operation. There must be a sufficient excess of carbon so it will burn to carbon monoxide, not dioxide; whenever the ratio of dioxide to monoxide rises above a number that varies with temperature, metallic iron re-oxidizes. The primitive metallurgist never understood this rôle of carbon in iron production; he merely knew that if he did things in a certain way he got a certain result. All the early attempts to produce metal from iron oxide must have ended in failure until it was empirically discovered that sufficient excess of carbon must be present to keep the carbon dioxide concentration down to where the reduction of iron oxide to iron can take place.

The confusion of thought regarding this process produced by a loose use of "smelting" will be illustrated by only a single example among the great number that might be cited. Walter Hough says<sup>1</sup> "The smelting of iron ore is impossible without forced draught. The bellows is therefore a device of great interest and importance." The first sentence is incorrect. Smelting means the reduction of the  $\text{Fe}_2\text{O}_3$  to iron, and that can be accomplished, in the absence of an excess of  $\text{CO}_2$ , at temperatures well below those attained in any ordinary fire. The melting of the iron so produced requires a temperature of  $1530^\circ \text{C}$ . or nearly  $500^\circ \text{C}$ . above the melting point of copper and gold. Even with the aid of a bellows primitive metallurgists could not attain this temperature, and consequently did not succeed in melting iron (though able to *smelt* it) until they empirically learned another step necessary to produce the desired result.

#### SMELTING MIXED ORES

When the discovery of the necessity for the presence of an excess of carbon in the smelting of iron ore was made the metallurgist was still far from practical success. He obtained a spongy mass of metal that he could not melt and that on exposure to air and water would quickly revert to oxide. By hammering he found he could

<sup>1</sup> *Proceedings, Nat. Acad. Science*, Washington, D. C., Vol. 2, 1916, p. 127.

compact it, but it must have taken a long while to develop the necessary technique to produce usable pieces by welding, and he could never melt it. Progress in the handling of the copper-bearing minerals was much easier and much more rapid. The substances found in nature were mixtures of minerals, and in smelting they yielded natural alloys. The Chinese have for centuries made a natural alloy of copper, nickel, and zinc which they call "white copper." It is interesting to note that the modern monel metal is also a natural alloy, made from the mixed copper-nickel ores of Sudbury, Canada. There can be no doubt that all the early bronze was made by smelting mixed copper-tin ores. At first naturally mixed ores were used, later ores that occurred separately were mixed before smelting, and eventually, but rather late, it was found that better results could be obtained by producing the metals separately and mixing them by remelting. Few articles of metallic tin have come down to us from antiquity; the inference is strong that it was not commonly produced as a separate metal. The reason why the early Egyptians had no bronze is that copper ore with admixed tin ore did not occur in their territory, and it was quite late before they established trade relations with regions whence a supply of tin ore could be obtained.

Seen in this light, most of the difficulties in understanding early metal production disappear. The ancients never produced *pure* metals, and melted them together to produce an alloy of desired composition, as is now done. They had no methods of analysis to determine what elements were present, for they had no clear notion of the nature of an element. They had a name for native copper and when their metallurgical operations produced something more or less like copper they called it copper, perhaps with a qualifying adjective. There were many names for what was essentially the same thing and different things were called by the same name; thus though *aes*, in Latin, was applied indiscriminately to copper, bronze, and brass, it seems to have meant merely something that was principally copper. Analyses of ancient metallic objects reveal them as containing a bewildering variety of metals. There is no need for bewilderment, however. The ancients made metal from such raw materials as were available to them, with whatever degree of skill they were able to command at the time. Sometimes the product was good metal and sometimes it was not. Copper-tin ores were the easiest mixture to work with and the one most likely to yield good metal. The idea that the ancients knew metallurgical secrets that we do not possess is too absurd for a moment's credence. They worked blindly, in the absence of accurate knowledge of the composition of their raw materials, or of the rôle played by various factors in the reactions. Such good metal as they more or less accidentally produced has been treasured through the ages, the bad metal they produced has been forgotten; most of it was probably remelted later.

#### METALLURGICAL TRANSFORMATIONS

It may be appropriate to digress long enough to remark that the efforts expended during the Middle Ages in the attempt to produce gold from substances not gold was not so ridiculous as it now appears to have been. Though the Greeks had the notion of elements, they did not suppose that gold, tin, lead, etc., were elements.



Pliny said:<sup>1</sup> "Sequitur natura plumbi, cuius duo genera, nigrum et candidum," and then goes on into a description which makes plain that he supposed lead and tin were light and dark varieties of the same metal. Indeed they might appear to be to people who had little means of distinguishing them except by their physical properties. If by packing objects of copper in powdered calamine and heating them for a time they can be turned into something so different in color and other physical properties from copper as brass is, there was no reason to deny that if the right way to treat the right substance could be found it could be turned into gold. In the light of the knowledge of the time it was a perfectly logical endeavor.

#### CARBON CONTROL

This digression has brought us two or three thousand years beyond the point at which we left iron. The Hittites are now generally accepted as the people who first acquired the practical skill necessary to control its carbon content, though Belck<sup>2</sup> makes a strong plea for crediting it to the Phoenicians. Pure iron is so soft as to be of little practical value; the older generation probably remember the iron wire used in putting up stove-pipe, and that it was almost as pliable as twine. But the Hittites are credited with learning to make a metal hard and tough enough so that it could be used for knives and swords. They did not know that they obtained this result through subjecting the metal to the influence of carbon monoxide long enough so that they had not only reduced the iron oxide to metal but had caused the metal to take up enough carbon so it became the iron-carbon alloy which we call steel. All they knew was that if they did it the right way they got a metal that was superior in many ways to anything previously produced. We do not know, nor does it really matter, whether they secured the reduction and carbon absorption in a single operation, or whether they first made the metal and then caused it to absorb carbon in a subsequent heating. Probably they did both, learning from the first that they could make a metal so hard and tough as to be very useful, but also one that was very hard to work. By working the metal into the desired shape while it was still soft and then causing it to take up the hardening carbon, the process was facilitated.

#### HARDENING IRON

This important discovery was complicated by the fact that the hardening effect of carbon on iron is not simply a function of the amount present. After the carbon content of the iron passes 8 pounds of carbon in a ton the metal begins to exhibit the remarkable property of developing a much greater hardness if it is raised to a cherry-red heat and then cooled suddenly, as by plunging it into water or oil. This is commonly loosely referred to as "tempering," but this operation is actually hardening, and tempering is a subsequent careful reheating to a much lower temperature in order to relieve the strains and brittleness set up by the sudden cooling.

When an article is first fabricated out of soft pure iron and then caused to absorb enough carbon so that it will harden when heated and chilled, a hard surface is produced on a softer and tougher core, because the carbon makes its way into the metal from the outside. The practical importance of this is due to the circumstance

<sup>1</sup> N. H., XXXIV, 16, 156.    <sup>2</sup> *Zeitsch. f. Ethnologie*, 1907, p. 334-381; Vol. 2, p. 15-30.



that the hardness resulting from carbon alone is normally accompanied by a corresponding brittleness, as illustrated by the care necessary to avoid nicking a razor blade. A sword is thick enough so it can be made to have a hard high-carbon edge and a tough low-carbon interior; all the famous swords of antiquity were so made. The steel balls of ball-bearings are now surface hardened in this way, giving a surface hard enough to resist wear and an interior tough enough to resist cracking; there are many other modern applications of the process. Our present knowledge enables us to make, in ways that need not be described, steel that is both hard and tough enough for most purposes, but the early metallurgist had to choose between hardness and toughness. The iron age had its beginning in the discovery of how to secure them simultaneously in the way described, not in the discovery of how to produce iron from iron oxide, which must have been almost contemporaneous with the production of copper from its ores.

To summarize, the production of iron from its ores is easy and must have been accomplished very early, but the production of iron of *usable quality* from ores is quite difficult and was not accomplished until long after the art of producing copper and copper alloys was well developed. The physical and chemical reasons for this have been explained above. The history of iron is the story of the continuous endeavor of metallurgists to attain a practical mastery over the carbon content of the iron, without knowing that it contained any carbon, or what the effects of carbon are. This concise attempt to explain them is somewhat confusing, because of the simultaneous effect of carbon content, produced by heating, and of hardening, produced by heating and chilling. It is easy to imagine how difficult it must have been to learn how to do it through experiment without understanding the factors in the process, if it is difficult to follow a simple (and therefore somewhat inaccurate) description of them and their effects. It might be added that in modern times it has been found possible to remove the brittleness in high-carbon iron by heating; malleable cast iron is thus produced. The reason for mentioning it here is to clinch the point that control of carbon in iron is a complicated and baffling matter. Instead of wonder that it was attained at a relatively late date it would be more reasonable to marvel that it could be attained at all by making experiments in which ten or a dozen factors which affected the result were simultaneously varying, without being able to recognize the factors and their effects.

Though the early history of iron can thus be deprived of much of its apparent difficulty, it must be said for the archaeologists that the arguments among those technologists who should understand its history have been a principal cause of difficulty. There are, of course, no accounts of early iron-making processes, at first because there is no written record of anything and later because the skill in iron-making was naturally regarded as a valuable trade secret, to be taught only to apprentices, and not otherwise revealed. Pliny's rambling pages give us no account of contemporary methods of production of iron and steel. Biringuccio's *De La Pirotechnia* (1540 A.D.) is the first account that amounts to anything and in places it is unintelligible to the modern reader. The methods used in making ancient iron objects can be inferred only by microscopic and chemical study of the objects themselves. The great variety of procedure used in iron-making by primitive

tribes at the present day strongly suggests equal diversity in early ages, but many students seem bent on proving that methods once discovered were maintained and spread over the world. To give the evidence against such a belief would require too much space, and I will merely state my own belief that the art of iron-making was slowly and with difficulty acquired in many different places at many different times, and that a considerable variety of methods, all within the limits imposed by the laws of physics and chemistry, were probably employed.

#### CASTING IRON

Mineral technologists greatly need the effective help of archaeologists in clearing up the early history of cast iron. Erroneous views regarding it that are not uncommon probably should be laid at the door of mineral technologists rather than of archaeologists. It was noted above that the primitive metallurgist could produce iron by smelting but could not melt it, because its fusing temperature is  $1530^{\circ}\text{C}$ ., or nearly  $500^{\circ}\text{C}$ . above the temperature at which gold and copper melt. But by causing the iron to absorb carbon its melting point is lowered, attaining a minimum of  $1170^{\circ}\text{C}$ . when the carbon content reaches 44 pounds per ton of iron. This is only about  $100^{\circ}\text{C}$ . above the melting point of gold, and there seems to be no reason to believe that after men had learned how to harden iron by causing it to absorb carbon the ability to melt iron with the furnace equipment used for melting gold and copper would be long delayed. In China, where the beginning of the use of iron weapons is dated about 500 B.C.<sup>1</sup> (although iron was earlier used for peaceful purposes), we find a variety of cast iron objects that perhaps date as early as 200 B.C. and certainly are not later than 20 A.D. For cast iron objects found in India a date as early as the eighth century A.D. is admitted.<sup>2</sup>

In the case of China, casting in iron seems to have followed close on the heels of the first production of iron, and I have elsewhere<sup>3</sup> suggested this was possibly due to the circumstance of having coal which contains phosphorus as their local fuel supply. The phosphorus thus accidentally introduced into the cast iron lowered its melting point to about that of copper and made it easier to work with, thus perhaps leading to the extensive use of cast iron in China at a time when it was scarcely used at all elsewhere in the world.

I find no mention of cast iron in the extensive literature on the use of iron in Egypt, while the references to it in Greek and Roman literature are but few, and have been the subject of controversy for more than a half-century. The article "Ferrum" which A. de Launay contributed to Daremberg & Saglio's *Dictionnaire des Antiquités*, Paris, 1896, is an excellent summary, and I agree with de Launay that the Greeks and Romans could cast iron and sometimes did. The arguments of the technologists who hold that the Greeks and Romans could not cast it because they could not melt it seem unsound, since Greek vases now in existence show iron furnaces in which it could have been melted if this had been desired. The evidence indicates that neither the Greeks nor the Romans made many iron castings, and the apparent

<sup>1</sup> C. W. Bishop, "Rise of Civilization in China," *Geographical Review*, Oct. 1932, p. 617-631.

<sup>2</sup> Neogi, *Iron in Ancient India*, Ind. Assn. for Cultivation of Science, Calcutta, 1914.

<sup>3</sup> Read, "The Early Casting of Iron," *Geographical Review*, Vol. XXIV, pp. 544-554, 1934.

reason for that was, as Pausanias says:<sup>1</sup> "The working of iron into statues happens to be the most difficult, and a matter of the greatest labor." The Chinese possibly hit on the introduction of phosphorus, making it more fluid and easy to cast, but the Western world did not. The greater brittleness of cast iron and its tendency to rust in the warm and humid climate of the Mediterranean region must have militated against its use, while the superstitions which attached to iron must not be ignored.

The most important reason, however, seems to be that cast iron was not cheap, as compared to cast bronze, in the ancient world. What we know about primitive iron metallurgy indicates that iron must have been relatively expensive, and consequently was used only for those purposes, such as cutting tools and weapons, for which its superior qualities justified the increased cost. China was the only place in which cast iron was relatively cheap, and consequently was extensively employed.

In Europe in the Middle Ages the gradual increase in the size of iron smelting furnaces made fused iron cheap, as compared to bronze, and the growing use of cast cannon and cannon balls in warfare furnished an important new use for cast iron. But it is absurd to claim that it was "invented" at that time, for the Chinese had been using it for over a thousand years and the evidence that both the Greeks and Romans sometimes cast it seems too strong. The most important aspect of the technical development of the Middle Ages, described above, was the economic one. It made cast iron much cheaper and available in large quantities, thus greatly extending its use. The earlier high cost of iron castings was not due to the difficulty attaching to the casting process itself, but lay mainly in the high cost of the iron from which the castings were made. While the big furnaces somewhat reduced the cost of the casting process, their principal effect was in reducing the cost of reduction of iron from oxide and the ready causing of it to absorb enough carbon to make melting easy.

One concludes from this that in interpreting the observable facts of archaeology, their economic aspects must be carefully considered as well as their technical implications. To arrive at the truth archaeologists and technologists need to work together, lest they separately go astray.

THOMAS T. READ

VINTON PROFESSOR OF MINING ENGINEERING  
Columbia University

<sup>1</sup> X, 18, 5.

## THE TWO CALLIAS DECREES

Two recent articles on the so-called Callias Decree have brought to an end at least one stage of the controversy which has been waged for many years over this important financial document.<sup>1</sup> Wade-Gery has proved<sup>2</sup> to the satisfaction of competent scholars that the famous Charvati marble, now in the Louvre, contains two Athenian psephismata, one on the obverse and the other on the reverse;<sup>3</sup> both of these decrees were enacted at one meeting of the assembly upon the motion of Callias. Unfortunately, however, the year of the passage of these bills is still a matter of dispute, for Wade-Gery's attempt to assign them to 422/1 has not met with approval. Professor Kolbe, for example, has made a new plea for 434/3.<sup>4</sup> He is undoubtedly right, as a careful analysis of the two documents will show.

Although, in general, Kolbe's analysis is in agreement with one which I made shortly after Wade-Gery's paper was published, there is possibly a slight difference in emphasis which leads to divergent conclusions about several crucial questions; and since Wade-Gery's preference for the date 422/1 was due in large measure to the fact that satisfactory answers for these questions had not been found,<sup>5</sup> I need offer no apologies for printing my analysis of the two decrees, even though it resembles closely that which Kolbe gives.<sup>6</sup> Upon this analysis depends my argument.

In the first place it is essential to remember that the so-called Callias decree has at last been resolved definitively into two psephismata. Document A, on the face which generations of scholars have been accustomed to call the obverse, deals exclusively with the treasures of the "other gods." Its provisions can be summarized as follows:

(Preamble) Whereas Athena's three thousand talents have been placed upon the Acropolis in accordance with a vote of the people, the money owing to the "other gods" shall now be paid back.

(a) Payments shall be made from funds which have been allocated for repayment to the gods by a decree of the people, viz., the money which is now in the hands of the Hellenotamiae, and such other money as belongs to the allocated funds. In addition, proceeds from the sale of the *δεκάτη* shall be used. The money shall be paid upon the presentation of properly audited vouchers. The *prytanes*, in conjunction with the *boule*, shall transfer the money and cancel the vouchers.

<sup>1</sup> *I.G. P.*, 91, 92; Tod, *Greek Historical Inscriptions*, No. 51; Hicks and Hill, *Greek Historical Inscriptions*, No. 49; Dittenberger, *Sylloge Inscriptionum Graecarum*,<sup>2</sup> No. 91.

<sup>2</sup> "The Financial Decrees of Kallias," *J.H.S.* LI, 1931, pp. 57-81. Tod and Wade-Gery give good bibliographies which I need not repeat here. In fact, Wade-Gery's article has made it possible to disregard a large part of his predecessors' work. Consequently I shall refer to this material only sparingly.

<sup>3</sup> Cf. Kolbe, *Sitzungsber. der Preuss. Akad. der Wiss., Phil.-hist. Klasse*, 1933, pp. 154-176; Tod, *op. cit.*, p. 106; Ferguson, *Treasurers of Athena*, p. 185; Pohlenz, *G.G.A.*, 1932, pp. 28 ff.; Koerte, *Hist. Zeitschrift*, 146, 1932, pp. 316 ff.

<sup>4</sup> *Op. cit.*; Ferguson, *op. cit.*, pp. 17, 185, and *passim*, thinks the date 434 is certain. Pohlenz, *loc. cit.*, follows Bannier, *Rh. Mus.* LXXV, 1926, pp. 184 ff., in preferring the date 431/0. Koerte, *loc. cit.*, though admitting the strength of some of Wade-Gery's arguments, is hesitant about accepting the date 422/1.

<sup>5</sup> Kolbe's latest article does not provide answers to these questions sufficiently new to remove Wade-Gery's objections to the year 434/3.

<sup>6</sup> *Op. cit.*, p. 160.

From the preamble we learn that the assembly had previously voted to reimburse the "other gods" as soon as a reserve of three thousand talents had been placed to Athena's credit on the Acropolis. This had now been done, and the funds which had been used for the accumulation of this reserve were now available for repayment to the other gods in accordance with the previous decree. Although paragraph *a* is ambiguous, there seems to be no good reason for thinking that the funds which had been allocated ἐς ἀπόδοσιν τοῖς θεοῖς were different from those which had been used to create Athena's reserve,<sup>1</sup> with the possible exception of the proceeds from the δεκάτη. The phrases which specify the funds which are to be used for reimbursing the gods, τὰ τε παρὰ τοῖς Ἑλλενοταμίαις ὄντα νῦν καὶ τὰλλα ἃ ἐστὶ τούτων τῶν χρημάτων καὶ τὰ ἐκ τῆς δεκάτης ἐπειδὴν πραθεῖ, have given rise to much speculation. Wade-Gery (p. 71) has translated the first two clauses thus: "the money which the Hellenotamiai have actually in hand and other money from the same fund"; and he suggests that this means *realized investments and unrealized investments*. He believes that the Hellenotamiae had loaned large sums at interest, thereby establishing a sinking fund. By *unrealized investments* he means that part of the sinking fund which had not yet been liquidated. I need not comment further on this ingenious hypothesis except to say that it ceases to be plausible the moment we reject the date 422/1.

Beloch also associated the words τὰλλα ἃ ἐστὶ τούτων τῶν χρημάτων with the Hellenotamiae,<sup>2</sup> for he thought the clause referred to uncollected tribute. I find it difficult to believe that τούτων can refer to τὰ παρὰ τοῖς Ἑλλενοταμίαις ὄντα νῦν. How can unrealized investments or uncollected tribute be considered a part of the money actually in the hands of the Hellenotamiae? On the other hand, if one translates the sentence somewhat as follows: "Payments shall be made from the funds which have been allocated by decree ἐς ἀπόδοσιν, viz., both the money now held by the Hellenotamiae, and the remainder of these (allocated) funds," τούτων has for an antecedent τῶν χρημάτων ἃ ἐς ἀπόδοσιν ἐστὶν τοῖς θεοῖς ἐφσεφισμένα. The clause καὶ τὰλλα ἃ ἐστὶ τούτων τῶν χρημάτων thereby becomes an innocuous and vague *et cetera*.

Interpreted thus the sentence seems to limit the allocated funds to money held by the Hellenotamiae and to miscellaneous receipts of an unknown character. The particle τε is then correlative with the καὶ before τὰλλα; and the second καὶ introduces a new idea. In other words, the proceeds of the δεκάτη had not previously been allocated ἐς ἀπόδοσιν.<sup>3</sup> Possibly the funds already allocated were insufficient to meet the state's obligations to the other gods without postponing the payments until the following year.

Whatever interpretation we give to this passage, we need not hesitate to assume that the Hellenotamiae had been helping for years to establish a reserve for Athena and that now their surplus funds were to be used for repaying the "other gods."

<sup>1</sup> Cf. Beloch, *Griechische Geschichte*, II<sup>2</sup>, 2, p. 346; Stevenson, *J.H.S.*, 1924, p. 6. Whether Beloch was right in thinking that the clause ἃ ἐς ἀπόδοσιν ἐστὶν τοῖς θεοῖς ἐφσεφισμένα both applied to Athena and to the "other gods" is immaterial. If a single decree had provided for the establishment of Athena's reserve and for repaying the "other gods," the clause undoubtedly would refer to this decree. On the other hand, if a second decree had authorized the repayment of the "other gods" from funds which had been set aside for Athena's reserve, the clause would have reference only to the "other gods." Still, the fact would remain that the same funds were to be used both to form the reserve and to repay the "other gods."

<sup>2</sup> *Loc. cit.*

<sup>3</sup> Cf. Beloch, *loc. cit.*



Two further points about paragraph *a* are worth noting. The author of the bill used the present infinitive of repeated action (*ἀποδιδόναι*) to indicate that the repayment was not a single transaction. Probably he intended that the money should be paid over from time to time as the vouchers were presented and as the funds were received until the account of each of the "other gods" was settled.<sup>1</sup>

In the second place, nowhere does the decree specify to whom the money shall be paid.<sup>2</sup> One may assert with much probability that the amalgamated board of treasurers of the "other gods" which was to be established in accordance with the next provision of the psephisma could not itself receive the money as it was paid, for the decree makes no provision for delaying operations until the ensuing Panathenaic year when the new board would be in office; and since it specifically orders the *logistai* then in office to conduct the audit, it is clear that no delay was intended.<sup>3</sup> One might possibly assume that the money was to be dispersed again among the officials who were then administering the affairs of the various "other gods," priests, *hieropoioi*, supervisors, or whatever they might be called.<sup>4</sup> Such a solution, however, seems to me unlikely, partly because it is directly counter to the purpose of the bill, partly because the new board was created primarily to take charge of the money now to be repaid (*Ταμίας δὲ ἀποκταμείνεν τούτων τῶν χρημάτων*). Since paragraph *a* does not specify what officials shall receive the money when it has been transferred to the account of the other gods, we must postpone further consideration of the question until we come to psephisma B.

(b) To take charge of these funds a new board of treasurers shall be selected by lot at the forthcoming elections, under the same regulations as govern the selection of treasurers of Athena. The Opisthodomos, which they shall share with the treasurers of Athena, is to be used by the new board as a storehouse for its funds.

(c) The new board shall take charge of *χρήματα* which had been in the hands of various officials under the preceding régime. The transfer shall be made in the presence of the *boule*, and a detailed record of the transactions shall be engraved upon a stele and placed upon the Acropolis.

Since this record was to include only items of gold and silver, and since the treasurers were required to state the total value of all the articles given into their charge, it is clear that no wholesale transfer of dedications was intended. Probably the word *χρήματα* means here coined money, bullion, and objects of gold and silver the value of which could be readily determined by weighing. It certainly does not include objects of bronze or of ivory such as are found in the *traditiones* of Athena.<sup>5</sup>

(d) For the future the new board shall make an annual report of receipts and expenditures. They shall submit their accounts quadrennially as do the treasurers of Athena.

(e) After the debts owing to the "other gods" have been paid, the balance of the sum allocated for this purpose shall be used for the dockyards and the walls.

<sup>1</sup> Cf. Wade-Gery, pp. 65 ff.

<sup>2</sup> Wade-Gery, pp. 65 ff., assumes without justification, so it seems to me, that the payments were to be made to treasurers of the "other gods." Kolbe, pp. 160-162 (cf. Pohlenz, *G.G.A.*, 1932, p. 29), is quite right in insisting that there was no amalgamated board to receive and care for these funds. Otherwise it would have been unnecessary to establish a board specifically for the purpose of safeguarding this money.

<sup>3</sup> Cf. Wade-Gery, pp. 65 ff.

<sup>4</sup> Cf. lines 12 f., 18-20.

<sup>5</sup> Wade-Gery, p. 76, seems to cite the inventory of the "other gods" (*I.G. I<sup>2</sup>, 310*) as proof that the treasury contained a few articles not made of gold or silver. Whatever he may have meant, the only items other than coin and bullion listed in the inventory are silver vessels.

The inscription breaks off at this point leaving three important questions unanswered:

(1) Had the Athenian people in the original bill authorizing repayment specified exactly what sum should be set aside for this purpose, or had they voted merely to draw upon certain specified funds up to the amount required? Since psephisma B refers to a sum of 200 talents in this connection, and since it too refers to the original bill authorizing repayment to the "other gods" (line 22), we shall have occasion to discuss this point further.

(2) What officials had charge of the allocated funds? Did the Hellenotamiae, for example, retain control of them until they were actually transferred to the account of the "other gods," or were they placed upon the Acropolis in the hands of other officials? Though the *prytanes* are instructed to make the payments, still it is very unlikely that they were permitted to act as temporary treasurers. They possessed neither the qualifications for such an office nor the conveniences for storing and safeguarding large sums. Psephisma B will help us to answer this question too.

(3) Who became custodians of the money between the time of repayment and the installation of the new board?<sup>1</sup>

Our analysis shows that psephisma A was an act for the repayment of money to the "other gods" and for the establishment (or reorganization) of a unified board of treasurers to care for this money, together with the money, bullion, and dedications of gold and silver which the "other gods" then possessed or might later acquire. It is a self-contained unit, with no extraneous provisions and no resemblance to a *lex satura*.

Kolbe argues forcefully against Wade-Gery and the latter's predecessors that no amalgamated board of treasurers had been established for the "other gods" before the passage of the legislation of Callias. To his arguments I should like to make one contribution. The terminology of the inscription, so it seems to me, is significant. It consistently speaks of the "other gods" as *οἱ θεοὶ*.<sup>2</sup> Nowhere is the qualifying adjective *ἄλλοι* applied to them. On the other hand, the words *οἱ ἄλλοι θεοὶ* became the official designation of this group of divinities at least as early as 429/8,<sup>3</sup> and they were used with unvarying regularity even when the treasury of the "other gods" was joined with that of Athena.<sup>4</sup> Thus the fact that our inscription employs a terminology at variance with the fixed usage of the years 429-415 can properly be taken as an indication that it antedates the adoption of the official title. In other words, the decree provides for the establishment of a new board, not for the reorganization of a joint treasury of the "other gods" which had been in existence for some time, for no one, I think, will seriously argue that the decree by itself is sufficient evidence for the existence of an amalgamated treasury of the "other gods" before its passage.

In contrast with psephisma A, psephisma B uses the official terminology of the later documents. The reason for this difference lies in the fact that psephisma B is primarily concerned with the treasury of Athena, as we shall see later. Thus the author of the bill, finding it necessary to differentiate between the two treasuries, hit

<sup>1</sup> See page 392 *supra* and pages 399, 401, *infra*.

<sup>2</sup> If Beloch, *loc. cit.*, was right in thinking that the phrase *ἐς ἀπόδοσιν τοῖς θεοῖς* in line 5 includes Athena as well as the "other gods," there is a slight inconsistency here.

<sup>3</sup> *I.G. I<sup>2</sup>*, 310.

<sup>4</sup> It is scarcely necessary to make an exhaustive list of citations for this well-known usage. I shall limit myself therefore to the period of the Peloponnesian War: *I.G. I<sup>2</sup>*, 127, 310, 324, 370 (cf. Wade-Gery, p. 66); Aristotle, *Ath. Pol.*, 30, 2; Andocides, I, 77.

upon the phrase which came later to be used officially to designate the new treasury and its officials. In psephisma A no such necessity existed. Thus the phrase *oi theoi* was sufficiently adequate for its purpose.

We may now conclude our discussion of psephisma A with a brief account of the deliberations which preceded its passage. It is clear from the decree itself that the assembly had previously voted to reimburse the "other gods," and that it had set aside for this purpose certain definite funds. Possibly a limit of two hundred talents had been set upon the money to be used for repayment. In any case, the assembly had voted to settle the accounts of the "other gods" as soon as the sum of 3000 talents should be deposited upon the Acropolis, and it is likely that the *Boule* had been instructed, either by the original bill, or by a later vote, to introduce a *probouleuma* at the proper time. Psephisma A is this *probouleuma*, or if not that, a substitute bill proposed by Callias on the same subject. Apparently it was passed without change. If it was altered, the amendments were inscribed on that part of the stone which is now lost.

At the same meeting of the assembly another bill was considered. It too was proposed by Callias, and as its adoption entailed a fundamental change in Athenian financial policy, it probably was presented to the assembly with the official support of the *boule*. The fact that it was enacted as a separate bill is sufficient proof that it deals with a matter quite distinct from that of psephisma A. We might entitle it "An Act for Regulating the Treasury of Athena," for it deals exclusively with Athena's property and the duties of her treasurers, as a brief analysis will show.

(a) Certain specified projects, already begun or specifically authorized by a previous act, shall be completed.

(b) In preparation for building and repairs of an unknown character,<sup>1</sup> a survey, previously ordered, shall be made. Expenditures for these building operations shall be limited to ten talents a year. The treasurers are to superintend the work.

The terminology of this paragraph is significant. The treasurers are called simply *ταμίαι*, not *ταμίαι τῆς θεοῦ* or *ταμίαι τῶν ἱερῶν χρημάτων τῆς Ἀθηναίας*. This brief title, however, is not surprising in a document dealing primarily with the treasury of Athena, especially as the joint treasury of the "other gods" had not yet been established.

It is worth noting also that the treasury of Athena was to bear the expense of the various undertakings authorized by the first two paragraphs of this psephisma, as will become clear from paragraph c.

(c) Apart from the projects mentioned above, together with necessary repairs, expenditures from the treasury of Athena shall be limited to 10,000 drachmas, unless authorized by the assembly after the passage of a bill of indemnity.

The purpose of the provisions in the first three sections of the bill is clear. Large-scale building operations are to cease with the completion of the projects under construction, and new operations are to be limited in scope. In other words, the treasury of Athena is to be safeguarded against large drafts such as were entailed by the Parthenon and the Propylaea. Since this is the obvious intention of that part

<sup>1</sup> For further discussion of these operations, see page 404 *infra*.

of the bill which we have just considered, one can say without exaggeration that it is primarily concerned with the treasury of Athena.

The next clause is badly broken and its exact significance is not clear. This much is certain:

(d) The Hellenotamiae shall deposit with the treasurers of Athena certain moneys.

(e) As soon as the "other gods" receive the money due them, the money of Athena shall be kept on the right side of the Opisthodomos, that of the "other gods" on the left.

(f) The treasurers in office, with the help of the last four boards, shall draw up an inventory of sacred treasures, weighing those of precious metal and enumerating the rest. (The rest of the psephisma is not preserved.)

Although paragraph *f* does not specifically mention Athena, there is no reason for thinking that the treasurers of the "other gods" were included in the general term of *ταμίαι*, and the very fact that the four boards of the last quadrennium were ordered to assist in the making of the inventory ought to be sufficient to prove that only treasurers of Athena were bound by these regulations. In my opinion, however, no proof is needed beyond the fact that every article in psephisma B deals primarily with Athena's treasury.<sup>1</sup>

We can now consider paragraphs *d* and *e* more in detail, for in them, if anywhere, are contained provisions which run counter to our hypothesis that psephisma B is exclusively concerned with Athena's affairs. At this point a word of caution is necessary. We must not hastily conclude from the fact that the Hellenotamiae and the "other gods" are mentioned here that the subject matter of these paragraphs is other than that of the rest of the bill. References to Hellenotamiae and the "other gods" in psephisma B can be paralleled by references to *logistai* and the treasurers of Athena in psephisma A, and we have seen that the subject of the latter was the treasury of the "other gods."

We must therefore attempt to restore the lacunae in paragraphs *d* and *e* in such a way as to bring them into direct relationship with the rest of the psephisma. Conversely, we must regard with suspicion any restorations which give to these provisions an appearance of irrelevance. For example, no restorations are acceptable which require us to assume that a provision for a far-reaching and fundamental reform of the treasury of the Hellenotamiae<sup>2</sup> was inserted into a bill on the treasury of Athena such as psephisma B and sandwiched in between two quite unrelated

<sup>1</sup> Cf. Kolbe, *op. cit.*, pp. 160 ff.

<sup>2</sup> It is generally assumed that paragraph *d* transferred to the treasurers of Athena the custody of funds which had been in the hands of the Hellenotamiae. Although this hypothetical transfer has been interpreted differently by different scholars, all are in general agreement that the transfer involved a fundamental reform of Athenian finances. Wade-Gery, p. 71, for example, felt impelled to assign the decrees to the year 422/1 in preference to 434/3, because he felt that paragraph *d*, as traditionally interpreted, could not have been in force during the period covered by the *logistai's* accounts (*I.G. I<sup>2</sup>*, 324), i.e., before 422/1. To him paragraph *d* was "one main obstacle to the date 434/3." Kolbe, however, finds nothing objectionable in the insertion of such a revolutionary provision into a bill which deals largely with Athena's treasury (*op. cit.*, pp. 162-164), for his restoration of the introductory phrase [*τὸ δὲ λοιπὸν*] is based upon the hypothesis that section *d* entailed a permanent reform. Ferguson's comments on this paragraph (*Treasurers of Athena*, pp. 154 ff.) are worth quoting to illustrate the far-reaching conclusions which have been based upon this badly preserved paragraph. He says that "a new departure of real significance was made in 434 B.C." By this he means that Athens then voted to create "a reserve on which the state could draw without borrowing and without paying



provisions concerning the treasury of Athena. The brevity of the provision, about two lines as now restored, is out of all proportion to the importance of the supposed reform. One would expect, on the analogy of our two psephismata, that any radical change in the powers and duties of the Hellenotamiae would have been the subject of a separate psephisma. One sentence, tucked away and hidden in the second Callias decree, is obviously inadequate.

Furthermore, the rapid change of topic in the currently accepted restorations arouses suspicion of their correctness. The sense would be much smoother if we could find restorations which would bind into a logical unit paragraphs *d* and *e*, the one mentioning the Hellenotamiae, the second providing for the division of the Opisthodomos between Athena and the other gods as soon as the debts to the other gods have been paid.

This brings us again to psephisma A, in which the Hellenotamiae are mentioned as one source of the funds which were to be used for repayment. Disregarding doubtful restorations in paragraphs *d* and *e* of psephisma B for a moment, we note that the Hellenotamiae are mentioned almost in one breath with the debts due the other gods. Can one for a moment doubt that the connection between Hellenotamiae and debts in psephisma B is fortuitous, or that it is different in any respect from the connection between the two subjects in psephisma A? The logical connection between paragraphs *d* and *e* is in this fashion established; in other words, either we must make a new division between the two paragraphs, transferring line 22 to paragraph *d*, or we must consider the two paragraphs as one article divided into two sections.

It follows now that the sole reason for mentioning the Hellenotamiae in paragraph *d* was because they were to provide the funds out of which the other gods were to be repaid.<sup>1</sup> The provision is therefore a temporary one, not the revolutionary reform which is implicit in the current interpretations of this passage.

We can now answer one of the questions which we formulated after analyzing psephisma A (p. 393): In whose hands was the custody of the money which had been allocated *ἡ ἀπόδοσις τοῖς θεοῖς*? Since the Hellenotamiae are ordered to deposit money with the treasurers of Athena, and since we now know that this deposit was for the purpose of reimbursing the other gods, it is clear that the treasurers of Athena were designated as the custodians of the allocated funds. The apparent irrelevance of paragraph *d* now disappears, for, although the Hellenotamiae are grammatically the subject of the verb, logically the section relates to the duties of

interest. That this is the significance of the crucial lines of *I.G.* I, 92 (50-52) has been recognized generally; for example by Meyer (*Forsch.*, II, pp. 113 ff.; *Gesch. d. Alt.* IV, pp. 281 f.), Francotte (*Finances*, p. 206), Dittenberger (*Syll.*<sup>3</sup> 91, n. 13) and Beloch (*Griech. Gesch.*, II, 2, p. 349). Stevenson's argument to the contrary (*J.H.S.*, 1924, pp. 6 f.; cf. De Sanctis, *Atthis*<sup>2</sup>, p. 490) is not conclusive." Ferguson's further discussion of this reform (cf. pp. 157 ff.) need not detain us longer. In passing let me say that Stevenson, *loc. cit.*, was certainly on the right track when he argued that paragraph *d* provided for a continuation of the procedure by which three thousand talents had been accumulated on the Acropolis. Now that the full amount of the Reserve Fund had been attained, the surplus revenues of the Hellenotamiae were available for another purpose, *ἡ ἀπόδοσις τοῖς θεοῖς*. Stevenson errs only in assuming that the Hellenotamiae were to continue to deposit their surplus revenues with the treasurers of Athena after the "other gods" had been reimbursed.

<sup>1</sup> Cf. Stevenson, *loc. cit.*



the treasurers of Athena. Upon them was placed a new duty, temporary in character, viz., the task of guarding and accounting for the allocated fund between the time of its receipt and its payment to the account of the "other gods."

Our analysis of psephisma A showed that the work of repayment was to be undertaken during the current year, i.e., before the new board of treasurers entered office; it did not enable us, however, to determine who was to have custody over the money between the time of its transfer to the "other gods" and the installation of the new board. Here again psephisma B probably comes to our assistance, for paragraph *e* states clearly what is to be done with the money after its payment. It is to be kept on the left side of the Opisthodomos. Although the treasurers of Athena are not specifically mentioned as the custodians of the money, there can be no question about their responsibility. The Opisthodomos was their own depository, and as we learn from psephisma A, they alone possessed the keys. Furthermore, psephisma A clearly shows that they were to retain charge of the Opisthodomos until the newly instituted treasurers of the "other gods" entered office.

Paragraph *e*, therefore, must not be regarded as a slightly more detailed version of that part of paragraph *b* in psephisma A which made the new treasurers of the "other gods" joint custodians of the Opisthodomos, possessing equal rights with the treasurers of Athena.<sup>1</sup> This provision of psephisma A was to become effective only after the new board entered office. Paragraph *e* in psephisma B was to become effective as soon as the payments were made, and it provides adequately for the interim between the time of payment and the time when treasurers of the "other gods" should assume the duties of their office and joint control of the Opisthodomos.

Regarded thus, paragraph *e* becomes a temporary provision like paragraph *d*, with which it is logically connected through the fact that both deal with the procedure of repayment; and like paragraph *d* it gives to the treasurers of Athena a new duty, that of guarding and accounting for the money repaid to the gods between the time of its payment and the installation of treasurers for the "other gods." The money was to be kept separate from the funds of Athena. It was to be placed on the left side of the Opisthodomos to indicate that it had been transferred to the account of the "other gods."

Paragraphs *d* and *e* are therefore brought within the scope of the bill by the fact that they impose new duties and obligations upon the treasurers of Athena. It is now clear that our previous interpretation of paragraph *f* is correct. It too lays an obligation upon the treasurers of Athena alone,<sup>2</sup> that of enumerating and weighing the sacred treasures in their charge. There can no longer be any doubt that the so-called *traditiones*<sup>3</sup> which begin with the quadrennium 434/3-431/0 and which comply exactly with the terms of paragraph *f*, so far as these terms have been preserved, were drawn up in obedience to this section of psephisma B. The wording of their quadrennial prescripts is in part copied exactly from paragraph *f*.

Scholars who believe that the provisions of paragraph *f* applied also to the treasurers of the "other gods" should compare the *traditiones* of Athena with the one

<sup>1</sup> Cf. Kolbe, *op. cit.*, pp. 160 ff.

<sup>2</sup> Kolbe, *op. cit.*, pp. 160 f., reaches this conclusion by a similar analysis of psephisma B. His further argument, p. 159, is discussed below.

<sup>3</sup> *I.G. I<sup>2</sup>*, 232-292.

inventory of the "other gods" which has been preserved.<sup>1</sup> There is no similarity. Athena's *traditiones* list only dedications. No money and no bullion is included,<sup>2</sup> and no attempt is made to express in terms of Attic silver coin the value of gold vessels and crowns. The inventory of the "other gods," however, includes only articles which are valuable because of their ready convertibility into money. Miscellaneous dedications of bronze and ivory do not appear, and, with the exception of coins, not many of silver, and none at all of gold. In other words, this inventory of the "other gods" complies exactly with the terms of paragraph *c* of psephisma A, and Athena's *traditiones* comply with the provisions of paragraph *f* of psephisma B. There is no longer any excuse for confusion; and probably, if psephisma A had been lost, and if the discussion of psephisma B had not been complicated and obfuscated by the mistaken efforts of scholars to show that psephisma B was a sequel to A, no confusion would ever have arisen, and no one would have regarded the final clause of the second bill as a general order to count and weigh the uncounted and unweighed dedications in the numberless shrines and temples of Attica.

In passing, it should be noted that Kolbe's attempt to show that paragraph *f* applies only to the treasurers of Athena<sup>3</sup> labors under the false assumption that psephisma A, paragraph *c*, provides for a complete inventory of the treasures of the "other gods" like that which paragraph *f* orders for Athena. Kolbe says that paragraph *f* cannot apply to the "other gods," for the simple reason that after the new treasurers entered office there would be nothing which had not been inventoried and weighed. This is true only in a very limited sense. We have learned from our comparison of the inventory of the "other gods" with the *traditiones* of Athena that the latter included much which the former omitted. The explanation of this difference probably lies in the fact that the board of treasurers for the "other gods" was established to care for the funds of these gods and other valuable possessions which could readily be converted into cash. Apparently there was no intention of transferring other kinds of dedications to the Opisthodomos. They would be left in the local shrines of Attica, and probably the old officials would still act as custodians for such objects.<sup>4</sup> Though this hypothesis cannot be proved from the provisions of psephisma A, still the inventory of the "other gods" which we possess suggests that it included only such items as had been moved from the local shrines to the Opisthodomos,<sup>5</sup> and by implication, at least, it seems to limit the competence of the new

<sup>1</sup> For a similar comparison of the *traditiones* with the inventory of the "other gods," see Ferguson, *Treasurers of Athena*, p. 98. He does not hesitate to make paragraph *f* applicable to the treasurers of Athena alone.

<sup>2</sup> The gold tetradrachmon and the few small gold nuggets in the Parthenon *traditiones* (*I.G. I*, 276-288) are too trivial to be regarded as a real exception.

<sup>3</sup> *Op. cit.*, pp. 159 f. Kolbe repeats Meyer's argument (*Forschungen*, II, p. 96) that paragraph *f* of psephisma B and paragraph *c* of A would duplicate one another if paragraph *f* applied to the treasurers of the "other gods."

<sup>4</sup> Kolbe, *op. cit.*, p. 158, seems to imply that the new board took over the functions of all existing local officials of the "other gods." In my opinion, however, psephisma A limits the competence of the new board to the custody of money and other objects of gold and silver that were to be transferred to its keeping.

<sup>5</sup> Cf. Ferguson, *op. cit.*, p. 165. The inventory of the "other gods" (*I.G. I*, 310) does not warrant Ferguson's generalization that the *tamiae* of the "other gods" were required to publish an inventory of "the money, sacred vessels, and *ex-rotas* of value of all the shrines of Attica, which simultaneously were

board to treasures stored there. Thus Kolbe is right in insisting that the new treasurers of the "other gods" would have nothing *in their charge* which had not been enumerated and weighed at the time when they assumed responsibility for the custody of the treasures given to them by the local officials. Still there would have been numberless items of little intrinsic value, like those which appear in Athena's *traditiones*, which might need to be counted, though it is unlikely that any would be worth weighing. If we grant, then, that all articles worth weighing had been removed from the local shrines, we can admit that Kolbe's point is well taken. The "other gods" possessed nothing which needed weighing after the new board entered office. Thus paragraph *f* must apply to the treasurers of Athena.

Wade-Gery has discussed at length the meaning of τῶν νῦν ταμιῶν in line 18 of psephisma A, and of οἱ ταμίαι οἱ νῦν in line 27 (paragraph *f*) of psephisma B.<sup>1</sup> We have already shown that paragraph *f* applies only to the treasurers of Athena. They were οἱ ταμίαι par excellence, and in fact at the time when the psephisma was enacted they were the only ταμίαι. Thus there would be no ambiguity in speaking of them simply as οἱ ταμίαι. The word νῦν might possibly be ambiguous, for it might have been used either to indicate the treasurers then in office, or to contrast the existing board of Athena's treasurers with the new board which was to be established to care for the property of the "other gods." The ambiguity is of no particular importance here, for the same persons are meant in either case; still the fact that οἱ ταμίαι οἱ νῦν were to receive the assistance of the four preceding boards makes it inherently probable that the word νῦν was used to indicate simply the treasurers then in office.

Line 18 of psephisma A has been provocative of much argumentation, quite unnecessarily, so it seems to me. In this passage the incoming treasurers of the "other gods" are ordered to count and weigh articles (received) παρὰ τῶν νῦν ταμιῶν καὶ τῶν ἐπιστατῶν καὶ τῶν ἱεροποιῶν τῶν ἐν τοῖς ἱεροῖς οἱ νῦν διαχερίζο[σι]ν. Wade-Gery thinks the repetition of the word νῦν is objectionally tautological, if the relative clause has for an antecedent the three nouns which precede, τῶν νῦν ταμιῶν καὶ τῶν ἐπιστατῶν καὶ τῶν ἱεροποιῶν τῶν ἐν τοῖς ἱεροῖς. I think he is probably right, and his translation is acceptable with a slight modification, "the present College of Tamiai plus such local Epistatai and Hieropoioi as at present have charge of treasure."<sup>2</sup> For the word *plus* I should substitute *and*. But Wade-Gery's deductions are false. The "present College of Tamiai" had nothing whatever to do with the "other gods," and Kolbe, in translating τῶν νῦν ταμιῶν as "Die im Amt befindlichen (localen) Tamiai" makes the same error.<sup>3</sup> Both of them forget that Athens had no treasurers (ταμίαι) at the time of the passage of this decree except those who administered Athena's

to be assembled in the Opisthodomos." Apparently only objects of gold and silver were so inventoried, as Ferguson states correctly, p. 106. But the restoration, col. III, l. 243 f., κεφάλαιον τῶν ἐν τοῖς νεῶς, is too conjectural to serve as proof that the *Kosmos* and sacrificial vessels left in the local shrines were included in the inventory.

<sup>1</sup> *Op. cit.*, p. 65. Kolbe, *op. cit.*, pp. 157-162, replies to Wade-Gery's arguments.

<sup>2</sup> *Op. cit.*, p. 65. Wade-Gery is here following Beloch.

<sup>3</sup> *Op. cit.*, p. 159, note 1. I agree entirely with Kolbe that the wording of psephisma A proves the non-existence of a college of treasurers for the "other gods." I would go even farther than he does, for I believe that οἱ νῦν ταμίαι are not even treasurers of the "other gods."

funds.<sup>1</sup> In other words, the phrase τῶν νῦν ταμιῶν points with no ambiguity whatever to the existing board of Athena's treasurers. At the end of their term of office, when the new treasurers of the "other gods" entered upon their duties, the treasurers of Athena were to surrender control of the money which they had just received, on deposit so to speak, for the account of the "other gods." At the same time, the officials of the local shrines of the "other gods" were to hand over their treasures too.

Our interpretation of this difficult passage would have been adopted long ago, if paragraphs *d* and *e* of psephisma B had been properly understood, for as we have seen, they give to the treasurers of Athena temporary custody of the money which the "other gods" were to receive. We can therefore regard lines 18 ff. of psephisma A and paragraphs *d* and *e* of psephisma B as mutually corroborative.

We now know to whom the payments were to be made, and fortunately our interpretation of lines 18 ff. fixes the time as well. It was to be completed before the new treasurers entered office, for they were to receive the money from the hands of the outgoing board of Athena's treasurers. This is welcome confirmation of a conclusion which we adopted in our analysis of paragraph *a* of psephisma A.<sup>2</sup>

As for the year, now that the last lingering doubts about the meaning of τῶν νῦν ταμιῶν in line 18 have disappeared, there is no longer any alternative to 434/3, since the decrees belong to a Panathenaic year anterior to the establishment of a united treasury of the "other gods" and posterior to the beginning of work on the Propylaea in 437/6. We know from the inventory of the "other gods" that there was a united treasury in 430/29 at the very latest.<sup>3</sup> Finally Athena's *traditiones* show that psephisma B was not later than the first year of the quadrennium 434/3–431/0.<sup>4</sup>

Since I have not attempted to discuss systematically Wade-Gery's views about the date of the decrees, it will be helpful to show the bearing of our analysis upon his position. This he states frankly as follows:<sup>5</sup> "I have argued the date 422/1, but have held a watching brief for 434/3, which I consider the next most probable date." Later he formulates an objection to the earlier date thus:<sup>6</sup> "First, it is improbable that the clause in lines 20–21 of Face Y<sup>7</sup> (however we restore them) was in operation during the period covered by the Logistai's accounts;<sup>8</sup> and this to me is one main obstacle to the date 434/3." In other words, his chief objection to the so-called orthodox date was a faulty interpretation of a badly restored provision. We have shown above that the provision to which he objects was temporary, and therefore not in operation during the period from 433/2 to 423/2. We have shown also that the words τῶν νῦν ταμιῶν in line 18 of A, upon which Wade-Gery relies to prove the previous existence of an amalgamated treasury to the "other gods," prove the contrary; and we have offered an alternative explanation of the phrase τὰλλα ἃ ἐστὶ

<sup>1</sup> Had there been ταμίαι of any of the minor cults, these ταμίαι would certainly have had in their keeping the vouchers mentioned in lines 11–13. But the officials who had these documents are called priests and *hieropoioi*, not treasurers.

<sup>2</sup> See pp. 392 f., *supra*.

<sup>3</sup> *I.G. I*, 310.

<sup>4</sup> These are in brief the reasons traditionally advanced for the date 434/3. For further details, see the articles by Kolbe and Wade-Gery cited above. Cf. also Ferguson, *op. cit.*, pp. 17, 185; Tod, *op. cit.*, pp. 107 f.

<sup>5</sup> *Op. cit.*, p. 37.

<sup>6</sup> *Op. cit.*, pp. 71, 74 f.

<sup>7</sup> These lines in face Y comprise paragraph *d*, psephisma B.

<sup>8</sup> These accounts (*I.G. I*, 324) cover the years 433, 2–423, 2.



τούτον τῶν χρημάτων (psephisma A, lines 6 f.) no more difficult than his "sinking-fund."<sup>1</sup> Wade-Gery is troubled by two further points:<sup>2</sup>

(1) the late spelling of psephisma A:

(2) the difficulty of reconciling Thucydides' statement (II, 13, 3) with the accumulation of a reserve amounting to 3000 talents by the year 434/3.

As for the late spelling, the fact that no analogous examples have been found in dated documents as early as 434/3 cannot be regarded as proof that the two psephismata were passed twelve years later. Arguments *ex silentio* must be used with extreme caution.<sup>3</sup> For a brief treatment of Wade-Gery's second point the reader should consult Ferguson's valuable treatise on the Athenian treasuries.<sup>4</sup>

It is now clear, I think, that A and B are parallel and coördinate psephismata, each dealing with a single subject, and related to one another only by the fact that the administration of the sacred treasuries is the subject of both. We can now see why the second decree was not incorporated in the first. The majority of its provisions were not pertinent to the administration of the "other gods."

Whether psephisma B was earlier than A, as Kolbe argues, is difficult to determine. I am not convinced by his arguments, for they are based upon an erroneous interpretation of paragraphs *d* and *e* in psephisma B.<sup>5</sup> Still the possibility remains to be considered; and the same paragraphs when properly understood and compared with lines 18 ff. of psephisma A continue to point to the priority of B, for the function of the treasurers of Athena (τῶν νῦν ταμιῶν) in lines 18 ff. of A cannot possibly be understood without reference to B, paragraphs *d* and *e*. From the latter we learn how the treasurers of Athena came into possession of money belonging to the "other gods" which psephisma A orders them to transfer to the new treasurers of the "other gods."

We can now consider the one remaining problem which our analysis of psephisma A left unsolved, for it involves the question of priority too. Psephisma A makes no mention of the amount of money allocated to repaying the "other gods." In psephisma B, on the other hand, a sum of two hundred talents is mentioned in this connection. Because of this difference between A and B it has been assumed that A was passed before B, and that a bill intermediary between A and B,<sup>6</sup> or a rider at the end of A fixed the sum to be allocated at 200 talents.<sup>7</sup>

<sup>1</sup> See p. 391, *supra*.

<sup>2</sup> *Op. cit.*, p. 74.

<sup>3</sup> Cf. Kolbe, *op. cit.*, pp. 171 f.; Ferguson, *op. cit.*, p. 185.

<sup>4</sup> *Op. cit.*, pp. 153 f.; see also Ferguson, *Athenian War Finance*, pp. 6-8 (reprinted from *The Proceedings of the Massachusetts Historical Society*, Vol. 64, February, 1932).

<sup>5</sup> *Op. cit.*, pp. 160 f. Kolbe argues that B is anterior to A, because the priority of B best explains why psephisma A does not explicitly divide the Opisthodomos into two sections for the two treasuries. Since this division had been provided for in psephisma B, there was no need to repeat the provision in A. We have seen, however, that paragraph *e* of psephisma B provides for a temporary contingency. Except possibly by implication, the law makes no provision for the period when the treasurers of Athena no longer have full control of the Opisthodomos. Some other arrangement might then be made. So far as concerns the Opisthodomos, the provisions of the two psephismata do not in any sense of the word duplicate one another. That of B ceases to be operative when paragraph *b* of psephisma A becomes effective.

<sup>6</sup> Beloch, *Griech. Gesch.*, II<sup>2</sup>, 2, p. 346.

<sup>7</sup> Ferguson, *op. cit.*, p. 163, thinks that the amount was specified either in a rider to psephisma A now lost, or at the end of the decree itself where the stone has been broken off.



Wade-Gery (p. 62), although he does not mention this particular point, believes that A was passed before B, because psephisma A "orders the repayment of monies to the Gods," whereas B "regards that order as already given." The question probably cannot be settled to the satisfaction of all; still it seems to me that Wade-Gery in postulating the priority of A, and Beloch<sup>1</sup> in assuming that an intermediate bill or rider ordered the allocation of 200 talents have neglected to note that psephisma A makes specific reference to an earlier act which set aside certain definite funds for repayment to the gods, and that psephisma B in slightly different words refers also to a previous psephisma<sup>2</sup> which ordered the Hellenotamiae to deposit with the treasurers of Athena the sum of two hundred talents.<sup>3</sup> In my opinion, the two psephismata refer to the same decree. I believe also that the greater precision of B was due to the fact that it was important to specify, at least approximately, the amount of money to be deposited with the treasurers of Athena in order to make clear the extent of their responsibility. In psephisma A the exact amount was immaterial, provided of course that it was adequate for the purpose. As it had been determined by a previous decree, and as psephisma A apparently made no changes in the provisions of this earlier decree, except possibly to allocate the proceeds of the *dekáτη* as an additional fund to be used *ἐς ἀπόδοσιν*,<sup>4</sup> an exact and complete restatement of its provisions was unnecessary.

It will be convenient to sum up our positive conclusions by outlining the procedure by which the "other gods" received the money due them. Omitting the preliminary audit, we begin with the deposit by the Hellenotamiae of two hundred talents in the hands of the treasurers of Athena. The treasurers of Athena held this money at the disposal of the *prytanes* who were empowered by psephisma A to make the payments. When the payments were made, the treasurers of Athena, acting as *ad interim* treasurers of the "other gods," transferred the money to the left side of the Opisthodomos, where it remained in their own custody until the new board was chosen and installed in office. At that time the newly created treasurers of the "other gods" received keys for the Opisthodomos, took charge of the money of the "other gods" stored there, and then received from the various local officials who had been responsible for administering the funds of their respective divinities such other treasures as were transferred to the Opisthodomos.

Our negative conclusions are possibly even more important, for we have shown that paragraph *d* of psephisma B does not provide for that revolutionary reform of the two most important treasuries of Athens, those of Athena and of the Hellenotamiae, which has been for so long a stumbling block to historians of Athenian finance and has served as a stimulus for much theorizing.

<sup>1</sup> *Op. cit.*, II, 2, p. 346.

<sup>2</sup> Cf. Kolbe, *op. cit.*, p. 161; Meyer, *Forschungen*, II, 95.

<sup>3</sup> Whether my suggestion that line 22 forms a part of paragraph *d* is credible or not, the fact remains that the two hundred talents mentioned in line 22 must have come from the Hellenotamiae, as we learn from psephisma A, paragraph *a*.

<sup>4</sup> See p. 391, *supra*.

## II

Psephisma B (*I.G. I<sup>2</sup>, 92*)

- [“Εδοχσεν τῇ βολῇ καὶ τοῖ δέμοι· Κεκροπίς ἱπρυτάνευε· Μνεσίθε]-  
 [ος ἐγραμμάτευε, Ε]ῦπ[ε]ίθεος [ἐπεστάτε, Κ]αλλί[ας] εἴπ[ε]· ἐκποιέσαι τὰ  
 [βάθρα τὰ λί]θινα καὶ τὰς Νί[κας τὰς χ]ρυσαῖς καὶ τὰ Πρρ[ύλαια· ἐπει]-  
 [δὰν δ’ ἐκποι]εθεῖ παντελῶς, [ἐπισκέφ]σει χρῆσθαι ἀπ[ὸ τοῦ νοτόθεν ἀ]-  
 5 [ρ]χσαμένος] κατὰ τὰ ἐφσεφ[ισμένα] καὶ τὴν ἀκρόπολιν [ἐκτειχί]σαι  
 [τὰ οὐκ ἐχσε]ργμένα καὶ ἐπι[σκευά]ζεν δέκα τάλαντα ἀ[ναλίσκοντα]-  
 [ς τὸ ἐνιαυτ]ὸν ἡεκάστο ἡέος [ἀν ποιε]θεῖ καὶ ἐπισκευα[σθεῖ τὰ τείχ]-  
 [ε ἡάπαντα· ἐ]πιστατόντ[ο]ν ὅ[τε τοῖ] ἐρ[γ]ο[ι] [ο]ῖ ταμίαι καὶ [κελευσάντο]-  
 [ν τὰ γράμματα] τὸν ἀρχιτέκ[τονα ποι]ῇν [ὁ]σπερ τῶ[ν] Πρρ[ύλαιον·] ἡοῦ]-  
 10 [τος δὲ ἐπιμ]ελέσ[θω] μετὰ τῶ[ν] ἐπιστ]ατῶν ἡόπως ἀριστ[α καὶ τάχιστα]-  
 [ἐκτειχισθ]έσεται ἡε ἀκρ[όπολις] καὶ ἐπισκευασθ[έ]σεται τὰ δεό[-  
 [μενα. Τοῖς δ]ὲ ἄλλοις χρέμα[σιν τοῖς] τῆς Ἀθ[ηναίας] το[ῖς] τε νῦν ἐμ π[-  
 [όλει ὅσιν κ]αὶ ἡάττ’ ἀν τ[ὸ] λο[ιπὸν] ἀν[α]φέρεται μὲ χρῆσθαι μεδὲ ἀπα[-  
 [ναλίσκεν] ἀπ’ αὐτῶν ἐ[ς] ἄλλο [μεδὲν] ἐ[ς] ταῦτα ἡυπέρ μυ[ρ]ί[ας] δραχμὰ]-  
 15 [ς] ἡ ἐς ἐπισκ[εφ]νὲν ἂν τι δέε[ι, ἐς ἄλλ]ο δὲ μεδὲν χρῆσθ[α]ι τοῖς χρέμα[-  
 [σιν ἂν μὲ τ]ὴν ἀδειαν φσεφ[ισεται] ὁ δῆμος καθάπερ ἐ[ὰν φσεφί]σειτ[-  
 [αι περὶ ἐσφ]ορᾶς· ἂν δὲ τις [εἴπει] ἐ[π]ιφσεφί[σ]ει μὲ ἐ[φσεφισμένη]-  
 [ς πο τῆς ἀ]ρ[ι]θ[μ]ῆ[ας] χρῆσθαι το[ῖς] χρέμα[σιν] τοῖς] τῆς Ἀθ[ηναίας], ἐνεχέ[-  
 [σθο τοῖς αὐ]τοῖς ἡοῖσπερ ἐά[ν] τι ἐσ[φ]έρεν εἴ[π]ει ἐ[π]ιφ[σεφί]σει. Ἐς]  
 20 [δὲ ἀπόδοσ]ιν κατατιθέ[ναι] κ[ατὰ τὸ]ν ἐνιαυτὸν τὰ ἡεκ[ασταχόθεν] π[-  
 [ροσιόντα] το[ῖς] ταμίαι τοῦ [τῆς Ἀθ]ηναίας τὸς Ἐλλ[λην]ο[ταμί]ας τὸς  
 [νῦν μέχ]ρι τῶ[ν] διακοσίων τα[λάντο]ν ἡὰ ἐς ἀπόδοσιν ἐφ[σέφισται] ἡ[-  
 [σὲν δὲ τοῖς] ἄλλοις θεοῖς ἀ[ποδοθ]εῖ τὰ ὀφειλόμενα, τα[μεινέσθ]ο τ[-  
 [ὰ μὲν τῆς Ἀθ]ηναίας χρέματα [ἐν τοῖς] ἐπὶ δεχσιὰ τῶ Ὀπισ[θοδόμο], τὰ δ[-  
 25 [ἐ τὸν ἄλλ]ων θ[εῶν] ἐν τοῖς ἐπ’ ἀρ[ιστερ]ᾷ. νακαί  
 [ἡοπόσα δὲ τῶ]ν χρεμάτων τὸν [ἡιερό]ν ἄστατά ἐστιν ἐ[ὰν ἀριθ]μετα ἡ[-  
 [οι ταμίαι ἡο]ι νῦν μετὰ τὸν τεττάρ[ο]ν ἀρχῶν, ἡαὶ ἐδίδο[σαν] νῦν τὸλ[λ]-  
 [λόγον ἐκ Πα]ναθηναίων ἐς Παν[αθῆνα]ια, ἡοπόσα μὲγ χρ[υ]σᾷ ἐστιν αὐ[-  
 [τῶν] ἐ ἀργυρᾷ] ἐ ὑπάργυρα σ[τε]ρ[σάντων], τὰ δ[ὲ] ἄλλ[α ἀριθ]μεσάντων . .]

The text of psephisma B, as tentatively restored above, is based upon that given by Wade-Gery (p. 63). Except in paragraphs *d* and *e*, which I have altered to conform to my interpretation of their meaning, the changes are slight. The following comments will make it clear why I have not followed Wade-Gery more closely.

Paragraph *b* (lines 3–12) provides for certain (building) operations and repairs to be undertaken in accordance with the findings of a survey which had been previously authorized. These operations, though not ambitious, were fairly extensive, for, together with the repairs, they involved a maximum annual expenditure of ten talents. The clue to their character, as Wade-Gery perceived, seems to lie in the incomplete word at the beginning of line 6 (ΡΙΜΕΝΑ) previously restored as γεγ[ραμμένα]. Apart from the difference between Wade-Gery (p. 60) and Kolbe (p. 176) about the possibility of reading the second letter as an *alpha*, the restoration of

γεγ]ραμένα with only one *mu* is to be avoided except as a last resort. In my opinion, the lacunae at this point are so great as to give great latitude to restoration; and therefore there is no necessity for one restoration, orthographically objectionable, in preference to another. Thus a word which can be spelled with one *mu* is preferable.

After building operations of fifteen years duration, involving the moving of large quantities of stone, it is not unlikely that the walls of the Acropolis had been breached in one or more places (cf. *I.G.* I<sup>2</sup>, 44) and that necessary repairs to other sections had been postponed until the Parthenon and the Propylaea should be finished. With this in mind we must find a subject for the verbs ποιε]θεί και ἐπισκευα]σθεῖ in line 7 which will contain the idea of the transitive verb in line 5, a verb which will take τὴν ἀκρόπολιν as its object. The same verb, with ἡ ἀκρ[όπολις] as a subject, in a passive form, seems to be partially preserved in line 11 (-έσεται). I suggest for the subject (lines 7 ff.) the phrase τὰ τείχε ἡπάντα. For the verb in line 5, the word ἐκτειχίσαι would be appropriate, since the preposition ἐκ in composition with the verb gives to the latter a meaning which is repeated in the adjective ἡπάντα in line 8. In line 11, the simple verb ἐκτειχισθ]έσεται is used thus: λόπος ἀριστ[α και λοσιότατα ἐκτειχισθ]έσεται ἡ ἀκρ[όπολις] και ἐπισκευασθ]έσεται τὰ δέόμενα.

In line 6, it is possible to retain Wade-Gery's suggested restoration if we substitute ἐ]ργμένα for the compound verb ἐχσε]ργμένα. The clause would read thus: και τὴν ἀκρόπολιν[ἐκτειχίσαι πλὴν μὲ τὰ ἐ]ργμένα. Or one can substitute εἰ for μέ. A third alternative is proposed in my text: [ἐκτειχίσαι τὰ οὐκ ἐχσε]ργμένα.

In line 19, the reading ἐά[ν τις ἐσ]φέρειν contains one too many letters. Can one read instead ἐά[ν τι ἐσ]φέρειν εἰ[π]ει?<sup>2</sup>

It is entirely possible, as Kolbe suggests (pp. 163 ff.), that the end of line 19 was left uninscribed, but it is equally possible that paragraph *d* began there. Kolbe's further suggestion that [τὸ δὲ λοιπὸν] be substituted for Kirchhoff's [ἐκ δὲ τὸν φόρον], or Wade-Gery's [και ἐς πόλιν] (Meritt:<sup>1</sup> [ἐς δὲ τὴν πόλιν]) is quite inconsistent with the temporary character of the provision. The other restorations labor under the same objection, for they presuppose a fiscal reform by which the treasurers of Athena became the custodians of the funds of the Hellenotamiae.

Furthermore, Kolbe's and Kirchhoff's restorations are objectionable because they supply an *omicron* in the space where Wade-Gery and Meritt recognized clear traces of a vertical hasta. Kolbe, it is true, after examination of the inscription, believes that Wade-Gery and Meritt were mistaken. I have not seen the stone since reading Kolbe's article, but when I examined it in 1929, I had no doubts about the existence of the hasta. Whether it is the hasta of an *iota*, or of some letter with a hasta to the left of center (cf. Wade-Gery, pp. 61 ff.), I cannot determine at this distance.<sup>2</sup> There is a second hasta in the space immediately following, ordinarily completed to form a *nu*. Although it is placed rather too far to the right for an *iota*, one must still consider the possibility in view of the difficulty of ascertaining whether the preceding letter was an *iota* or not. If the first letter was not an *iota*, the second was almost certainly one, and *vice versa*. For the first alternative, I have found only one likely

<sup>1</sup> As suggested to Wade-Gery (*op. cit.*, p. 61).

<sup>2</sup> Meritt tells me that he has again examined the stone. The first hasta is certain, and he assures me that the letter was *iota*. The following letter was *nu*.

combination, the last two letters of  $\nu\upsilon\lambda\iota$ . The phrase  $[\kappa\alpha\tau\grave{\alpha}\ \delta\epsilon\ \tau\omicron\ \nu\upsilon\lambda\iota]$  would fill the lacuna. Furthermore, it would form an appropriate introduction for a temporary provision such as paragraph *d*. But this would probably be redundant if we restore in lines 21 f. the words  $\tau\omicron\varsigma\ \nu\upsilon\upsilon\upsilon$  after  $\text{'Ελληνοταμίας}$ , as I have done.

If we read the first hasta as an *iota*, we can restore the phrase  $[\epsilon\varsigma\ \delta\epsilon\ \acute{\alpha}\pi\omicron\delta\omicron\sigma\iota\upsilon]$  to make the purpose of the deposit clear. If Kolbe is right in thinking that there is no first hasta, we can place the *iota* within the brackets.

It seems unnecessary to revive the old question whether the Hellenotamiae were required to deposit their surplus funds ( $\text{περίοντα}$ ) or their revenues ( $\text{γενόμενα}$ <sup>1</sup> or  $\text{προσιόντα}$  (Kolbe, p. 164). The fact that  $\kappa[\alpha\tau\grave{\alpha}\ \tau\omicron]\nu\ \acute{\epsilon}\nu\iota\alpha\upsilon\tau\omicron\upsilon\upsilon$  means "in the course of this year," and not "in the course of each year" as has been commonly assumed, alters the problem, and the fact that a limit of two hundred talents was placed upon the amount of these deposits suggests that more than this amount would have been available for deposit if necessary. But this does not enable us to determine whether revenues or surplus funds were to be deposited, for we may take it for granted that the decree does not require so large a deposit as to curtail the imperial establishment which was financed from the income of the Hellenotamiae. Two hundred talents may therefore be considered as the minimum annual surplus which had been accruing to Athens from the empire; whether it was to be deposited from time to time as the income came in, or as balances were left in the treasury after the payment of the normal standing obligations of the Hellenotamiae, it was in effect a surplus. Thus either the deposit of  $\tau\grave{\alpha}\ \text{ηεκά[στοτε γενόμενα]}$  or the deposit of  $\tau\grave{\alpha}\ \text{ηεκά[στοτε περίοντα]}$  would probably have been practicable. If Athens was in a hurry to reimburse the gods, as may possibly be inferred from paragraph *a* of psephisma A (that is, on the assumption that an additional fund, the  $\text{δεκάτη}$ , had been allocated  $\epsilon\varsigma\ \acute{\alpha}\pi\omicron\delta\omicron\sigma\iota\upsilon$ ), revenues might have been deposited; or if a more leisurely procedure was planned, the surplus funds left in the hands of the Hellenotamiae could be used. This would have the advantage of leaving undisturbed the normal routine of the empire, and it might also explain why the  $\text{δεκάτη}$  was to be used.

For these reasons, there seems to be no means of choosing between  $\tau\grave{\alpha}\ \text{ηεκά[στοτε γενόμενα]}$  and  $\tau\grave{\alpha}\ \text{ηεκά[στοτε περίοντα]}$ . Kolbe's suggested alternative  $\tau\grave{\alpha}\ \text{ηεκά[στο μενός προσιόντα]}$  is also acceptable, although I see no particular reason why the deposits should have been made monthly.

I have ventured to suggest a fourth alternative,  $\tau\grave{\alpha}\ \text{ηεκά[σταχόθεν προσιόντα]}$ . This restoration emphasizes one aspect of the situation better than its predecessors. According to psephisma A the allocated fund consisted of three elements, the money then in the possession of the Hellenotamiae,  $\kappa\alpha\iota\ \tau\grave{\alpha}\lambda\lambda\alpha\ \acute{\alpha}\ \acute{\epsilon}\sigma\tau\iota\ \tau\omicron\upsilon\tau\omicron\upsilon\upsilon\ \tau\omicron\upsilon\upsilon\ \chi\text{ρεμάτων}$ , and the proceeds of the  $\text{δεκάτη}$ . According to psephisma B, the money was all to come from the Hellenotamiae. The inference is clear. The proceeds of the  $\text{δεκάτη}$  and  $\tau\grave{\alpha}\lambda\lambda\alpha\ \acute{\alpha}\ \acute{\epsilon}\sigma\tau\iota\ \tau\omicron\upsilon\tau\omicron\upsilon\upsilon\ \tau\omicron\upsilon\upsilon\ \chi\text{ρεμάτων}$  were both administered by the Hellenotamiae.<sup>2</sup> We need some general phrase in psephisma B which will include the three items of psephisma

<sup>1</sup> For a recent discussion, see Ferguson, *op. cit.*, pp. 157 ff.

<sup>2</sup> If the Hellenotamiae had in their keeping the proceeds of the  $\text{δεκάτη}$ , it must have been an imperial and not a local Athenian tax, and it was doubtless included in the six hundred talents of tribute which, according to Thucydides, was being collected at the outbreak of the Peloponnesian War.

A, and τὰ ἡεκα[σταχόθεν προσιόντα, meaning "their revenues from whatever source," would undoubtedly be both clear and adequate.

The foregoing analysis is based upon a premise which may possibly be questioned, namely, that the provisions of psephisma B on this point did not deviate in any respect from those of psephisma A. I have made this assumption because it is natural to think that two parallel bills as important as our two psephismata would have been carefully drafted to avoid inconsistencies. If B is anterior to A, as I believe, then A must repeat the provisions of B without change. Only if a rider had been appended to B stipulating the addition of the δεκάτη to the allocated funds would psephisma A contain additional matter.

In lines 21 ff., I am not quite happy about the restoration, (ἐπειδὴν δ' ἀπὸ τοῦ) proposed for the lacuna after Ἑλλενο[ταμίας. A division at this point between paragraphs *d* and *e* gives an unnecessarily complicated paragraph *e* and a paragraph *d* which seems to be cut short in the middle. Although I do not insist upon this point, I should feel better satisfied if the break between the two paragraphs, which, by the way, is no longer the rapid transition it once was, could be placed at the end of line 22 instead of at the end of line 21. Consequently, I propose for the consideration of scholars a restoration for this lacuna which would give to the paragraph some such meaning as this: "For the purpose of repayment the Hellenotamiae now in office are to deposit with the treasurers of Athena during the course of this year their receipts from whatever source, up to the sum of the two hundred talents which has been previously voted." For μέχρι τοῦ we might substitute μὲν ὀλίγον (not less than).

The transition between paragraphs *d* and *e* is now easy. We restore for ἐφ[σεφίστατο ἡ δὲμος the words ἐφ[σέφισται ἡ δὲμος and the paragraph becomes simple and straightforward: "When the money owing has been repaid to the 'other gods', the treasures of Athena shall be stored on the right side of the Opisthodomos, those of the 'other gods' on the left." I think Wade-Gery (p. 65) is correct in thinking that this provision was to go into effect as soon as one installment was transferred to the account of the "other gods."

Kolbe (p. 166) objects to Wade-Gery's νῦν in καὶ ἐδίδο[σαν τὸν νῦν λόγον. He prefers Kirchhoff's αἰεὶ τὸν λόγον, even though Wade-Gery has shown that Attic epigraphic usage calls for αἰεί. But the word νῦν in Greek is used of past time to give the meaning "just now," or "very recently." The clause might then be restored to read καὶ ἐδίδο[σαν νῦν τὸν λόγον. It would mean, "which were just now submitting their accounts."

#### APPENDIX

I have suggested above that the Hellenotamiae had contributed their surplus funds from year to year to form a Reserve of 3000 talents. In 434, anticipating a surplus of at least 200 talents, provided that the δεκάτη was used for repayment, the assembly voted to take this amount from the Hellenotamiae as soon as the money was collected by them. The question arises: "How does it happen that the Hellenotamiae in 435/4 paid to the Propylaea building commissioners a sum designated cryptically ἀπὸ στρατιᾶς (I.G. I<sup>2</sup>, 366)?" This ought to have been placed to the credit of the Reserve, if the surplus funds of the Hellenotamiae had been allocated for this



purpose. The similar payment in 434/3 is not difficult to explain (*I.G. I<sup>2</sup>, 367*). It could very well have been made after the deposit of two hundred talents had been completed. May I suggest that there was a slight interval between the completion of the reserve fund of three thousand talents and the decision to carry out the provisions of the earlier decree to reimburse the "other gods"? Then there might have been a time toward the end of 435/4 when the revenues of the Hellenotamiae could be used for other purposes. Or possibly some other explanation can be found.

## POSTSCRIPT

This article was written and in galley proof before I learned that Wade-Gery (*J.H.S.*, LIII, 1933, p. 135) no longer believes that lines 19-25 of psephisma B contained provisions for a revolutionary reform of the treasury of the Hellenotamiai which required them to deposit their funds with the treasury of Athena. In consequence, Wade-Gery has ceased to defend the year 422/1. More recently Meritt in his *Note on the Decrees of Kallias* (*A.J.P.*, LV, 1934, pp. 263-274) has made other important contributions to our knowledge of these documents. His interpretation of the significance of the crucial lines 19-25 of B is substantially the same as that which I have adopted, although his restorations are different. In other parts of the document he reports the discovery of traces of letters which have not hitherto been noted, and he offers new restorations which deserve careful consideration. Unfortunately Wade-Gery's recantation and Meritt's article appeared too late for me to take advantage of their suggestions.

ALLEN B. WEST

UNIVERSITY OF CINCINNATI

## THE DATE OF THE OLDER PARTHENON

UNDER this title, in 1902, was published an authoritative article by Professor Dörpfeld, apparently closing for all time the debated question of the age of the predecessor of the marble Parthenon which we see today.<sup>1</sup> Exactly a decade earlier Dörpfeld had published his architectural restoration of the Older Parthenon,<sup>2</sup> a study which was only slightly modified by his later article; and exactly a decade afterwards this plan in turn was drastically revised in a brilliant article by Dr. Hill.<sup>3</sup> The date proposed by Dörpfeld, however, is still in favor; and it now seems desirable to review his arguments in the light of evidence made available since his publications.

### 1. ARCHITECTURAL EVIDENCE

The various changes of opinion with regard to the date may be briefly summarized.

(I) Before 1902 there was no reason to suppose that there had been more than one Older Parthenon, and the question was merely that of a single date.

(A) It was originally suggested by Leake that the Older Parthenon was pre-Persian, on the basis of the ambiguous reference by Hesychius (s.v. *ἐκατόμπεδος*) and the existence of architectural remains in the north wall of the Acropolis (marble drums and poros entablature blocks) which he assigned to this site, even before the foundations were discovered.<sup>4</sup> The pre-Persian date was verified by Ross, who excavated south of the Parthenon in 1835-1836 and discovered that the terrace contained burnt Persian debris, and that both the foundation *in situ* and the marble drums in the north Acropolis wall showed traces of a conflagration.<sup>5</sup> From this moment the pre-Persian date of the Older Parthenon seemed to be an assured fact.<sup>6</sup>

(B) A second stage was marked by the Acropolis excavation of 1885-1890, when Dörpfeld identified the old poros temple of Athena and concluded that this must have been the temple to which Hesychius referred, proving, moreover, that it had been the true site of the poros entablature blocks in the north Acropolis wall. He immediately perceived that the marble column drums must belong to a different and later temple, namely, the foundation of the Older Parthenon, which he assigned to the period of Kimon.<sup>7</sup> This date he regarded as confirmed by the excavation of 1888 south of the Parthenon, revealing a terrace fill composed of fragments of

<sup>1</sup> Dörpfeld, *Ath. Mitt.* 1902, pp. 379-416.

<sup>2</sup> *Ibid.*, 1892, pp. 158-189.

<sup>3</sup> Hill, *A.J.A.* 1912, pp. 535-558.

<sup>4</sup> Leake, *Topography of Athens*, 1821, pp. xii, 282-284.

<sup>5</sup> Ross, *Arch. Aufs.* I, pp. 82-117, 127-141; II, pp. 285-286.

<sup>6</sup> Leake, *Topography* <sup>2</sup>, I, pp. 554-556; Penrose, *Athenian Architecture* <sup>1</sup>, pp. 17-18, 73-75, pl. IX, XXXIV, XL; Beulé, *Acropole d'Athènes*, II, pp. 5-13; Strack, *Arch. Zeit.* 1862, pp. 241-245, pl. CLX-CLXI; Michaelis, *Parthenon*, pp. 112-113, 119-123; Burnouf, *Légende athénienne*, pp. 53-61; *Ville et Acropole d'Athènes*, pp. 164, 176, 179-181, 183-184; Penrose, *Athenian Architecture* <sup>2</sup>, pp. 18-20, 98-102, 116-118, pl. 9, 46; *J.H.S.* 1891, pp. 275-297; 1892, pp. 32-47. All these writers, of course, were in error in one respect: the Older Parthenon was not the old finished temple of Athena burnt by the Persians, to which Hesychius seems to have referred. And Burnouf even claimed that the marble drums in the north wall were extra blocks from the Periclean structure (*Ville et Acropole*, p. 184).

<sup>7</sup> Already in his first discussions of the poros temple (*Ath. Mitt.* 1885, pp. 275, 277; 1886, p. 165; 1887, p. 45; *Ant. Denk.* I, pl. 1), Dörpfeld had outlined his Kimonian theory of the Older Parthenon.

early buildings and sculptures which he regarded as those destroyed by the Persians, accompanied by potsherds of which many were red-figured and therefore agreed with a date early in the fifth century for this débris.<sup>1</sup> Regarding all this material as "Perserschutt," it seemed obvious that it must have been deposited at some time after 480 B.C., though before the age of Pericles, and so presumably during the political supremacy of Kimon, while building the great south wall.<sup>2</sup> The physical relationship showed that the Parthenon foundation must in any case have antedated the south wall by an unknown period of time; Dörpfeld suggested that it was begun shortly after the banishment of Themistokles in 471 B.C., and such a date won general acceptance.<sup>3</sup> More exactly, Foucart preferred 469 B.C. because of his reading of the Strasbourg Papyrus.<sup>4</sup> Köpp descended even farther, to 454 B.C.<sup>5</sup> Furtwängler offered merely a variation in that he preferred to regard Themistokles as the builder, in 479 B.C.,<sup>6</sup> a view which Dörpfeld recognized as not impossible.<sup>7</sup> Of those who wrote at this time, only Penrose adhered to the older view that the Older Parthenon was pre-Persian.

(II) In 1902, however, Michaelis published his article on the Ἀρχαῖος Νεώς, arguing that a reference to such a structure apparently dating from about 506 B.C. implied that there were already at this early period two temples of Athena on the Acropolis, one of them being a hypothetical Older Erechtheum. But Dörpfeld, who rightly looked with suspicion upon the "Older Erechtheum," now reviewed the evidence bearing on the Older Parthenon and argued that it, too, could be thrust back as far as 506 B.C.<sup>8</sup> His most important evidence was the resurrection of the data furnished by Ross concerning the burnt Persian débris and the traces of fire on the foundation and column drums; after verifying these traces of a conflagration, Dörpfeld returned to the earlier theory that the Older Parthenon had been destroyed by fire in 480 B.C. A reëxamination of the old photographs and sketches of 1888—the resulting sectional reconstruction of the strata (compare Fig. 1—after the lapse of fourteen years, being in itself a remarkable feat) showed that the fill contemporary with the foundation lacked burnt Persian débris and so antedated 480 B.C. From these facts it would have been natural, and probably sufficient, to draw the inference that the Older Parthenon had been commenced a short time before 480 B.C., namely, immediately after the battle of Marathon in 490 B.C. But Dörpfeld went farther. For he deduced two facts, either of which seemed adequate evidence, but when combined appeared to form irresistible proof, that the Older Parthenon had passed through two building periods, with a change of plan which suggested a longer duration and a more notable interruption than could be found within the decade

<sup>1</sup> Dörpfeld, *Ath. Mitt.* 1888, pp. 106, 224, 431–435; 1892, pp. 162, 187. <sup>2</sup> *Ibid.*, 1892, pp. 188–189.

<sup>3</sup> Wolters, quoted in Graef, *Vasen der Akropolis*, I, p. xxiv (written about 1888); Harrison and Verrall, *Mythology and Monuments of Ancient Athens*, pp. 467–470; Bötticher, *Akropolis*, pp. 88, 91, 97–99; Miller, *A.J.A.* 1893, pp. 520–521; Graef, *Jb. Arch. I.* 1893, Anz., 15; Curtius, *Stadtgesch. v. Athen*, pp. 127–133; Beloch, *Gr. Gesch.* I, p. 583; Middleton, *Plans and Drawings of Athenian Buildings*, pp. 4–7, nos. 55, 57, 83, 103, 112, 120, p. 12 E, pl. I, II, XIII; Frazer, *Pausanias*, II, p. 306; Ed. Meyer, *Forschungen zur alt. Gesch.* II, p. 97, n. 1; Keil, *Anonymus Argentinensis*, pp. 81–107; Michaelis, *Jb. Arch. I.* 1902, p. 12. <sup>4</sup> Foucart, *Rev. phil.* 1903, pp. 7–8. <sup>5</sup> Köpp, *Jb. Arch. I.* 1890, p. 270.

<sup>6</sup> Furtwängler, *Meisterwerke*, pp. 162–168; *Masterpieces*, pp. 419–423; Busolt, *Gr. Gesch.* II 1, pp. 359–360; Dümmler, in Pauly-Wissowa, II, 1953–1954; Gardner, *Ancient Athens*, pp. 210–213.

<sup>7</sup> Dörpfeld, *Ath. Mitt.* 1897, p. 167–168. <sup>8</sup> Cf. *A.J.A.* 1932, pp. 307 ff., and p. 311, n. 3.

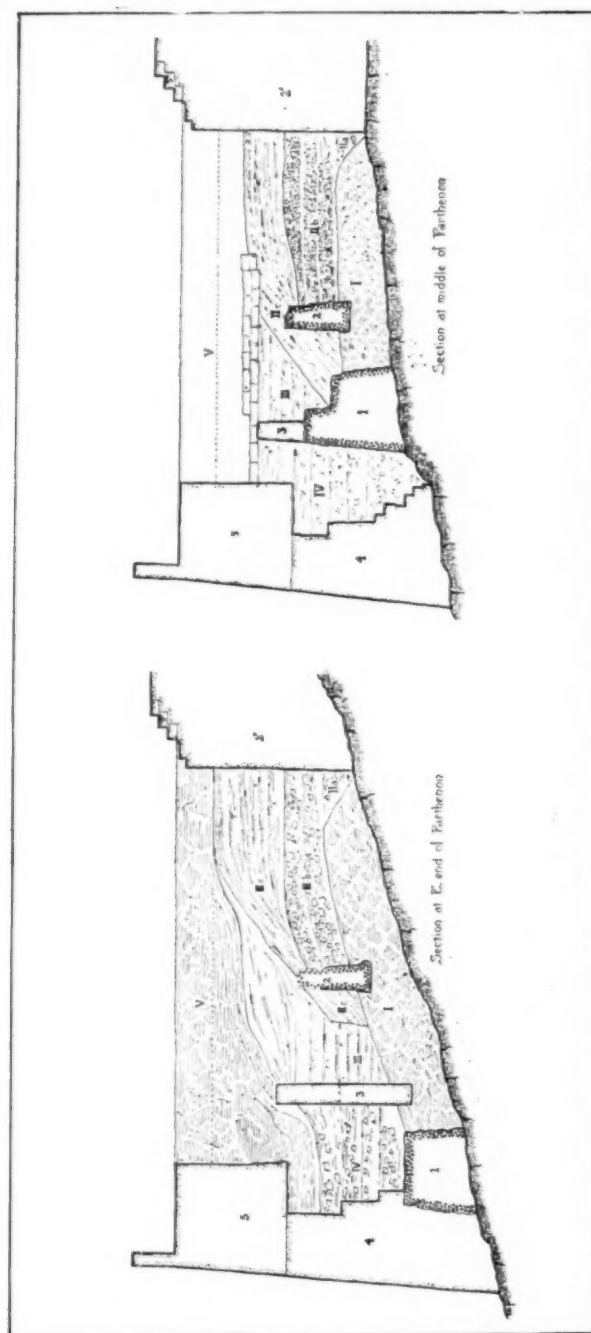


FIG. 1.—SECTIONS OF TERRACES SOUTH OF PARTHENON  
Slightly modified from Dörpfeld, *Ath. Mitt.* 1902, pp. 393-394

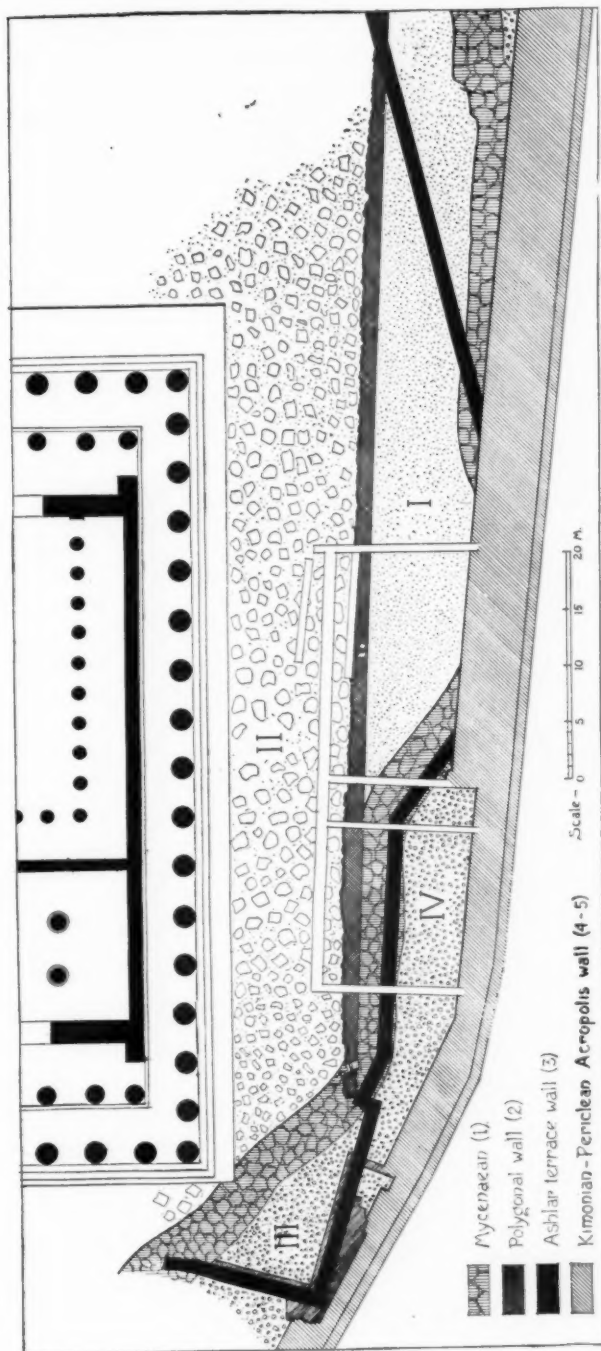


FIG. 2.—GENERAL PLAN OF TERRACES SOUTH OF PARTHENON  
NOTE.—Only the lowest strata are represented south of the polygonal wall, while at the north of this wall is shown the superimposed stratum II



490-480 B.C. The first of these facts was the existence of two sets of temporary retaining walls for the terraces south of the Parthenon, differing in technique and date (one polygonal limestone and the other poros ashlar).<sup>1</sup> The second fact was the incongruity between a poros and Kará limestone crepidoma supporting a marble colonnade, an unsatisfactory contrast which argued a change and enrichment of design at the level of the stylobate.<sup>2</sup> From these observations seemingly resulted the following equations:

- (a) polygonal retaining wall = poros limestone crepidoma;
- (b) ashlar retaining wall = calcined marble drums.

Since the chronological succession of the two equations is assured, and since the calcined marble drums (b) are manifestly pre-Persian, it appeared to be necessary to conclude that both periods were pre-Persian.

(C) Consequently Dörpfeld assigned stage (a), assuming that the limestone crepidoma was intended to support a poros limestone colonnade, to 510, 508, or 506 B.C.,<sup>3</sup> and stage (b) to 490 B.C.<sup>4</sup> These seemed to be conclusive arguments, and the new chronology found general acceptance.<sup>5</sup>

(D) Dörpfeld even considered, though with less favor, the possibility of earlier dates, the poros Parthenon in the period of Hippias (514-510), and the change to marble in that of Kleisthenes; but he rightly regarded this as less probable on account of the red-figured sherds which would then necessarily antedate Hippias, and the resulting excessive length of the building period and the improbable use of Pentelic marble under Kleisthenes.<sup>6</sup> This theory has been revived, however, by Walter, who regards the decade 490-480 B.C. as an improbable one for monumental building on account of the impending Persian danger, and assigns stage (b), the marble Older Parthenon, to Kleisthenes, and stage (a), the poros Older Parthenon, to the Peisistratidae, who thus showed Athena the same consideration that they displayed toward Zeus in the Olympieum of the lower city.<sup>7</sup>

(E) On the other hand, it is necessary to record another variant opinion, that of Furtwängler, who likewise accepted the pre-Persian date for both stages of the work, but set both in the decade after Marathon, on the basis of a general impression

<sup>1</sup> The ashlar retaining wall had been ignored in Dörpfeld's article of 1892, though he had discussed it earlier (*Ath. Mitt.* 1887, p. 386; 1888, pp. 433-434).

<sup>2</sup> Dörpfeld, *Ath. Mitt.* 1902, p. 399.

<sup>3</sup> The most probable date would have been 506 B.C.; for Kleisthenes was in power for a very short period after the banishment of Hippias in 510, and was in his turn displaced by Isagoras with the help of Kleomenes. Not until 507 B.C. did the capitulation of Kleomenes on the Acropolis permit the return of Kleisthenes; and not until the defeat of the confederated attack of the Spartans, Boeotians and Chalcidians on Attica in 506 B.C. would he have been free to undertake great structural embellishments.

<sup>4</sup> Dörpfeld, *Ath. Mitt.* 1902, pp. 379-416; 1911, pp. 49-51; *Jb. Arch. I.* 1919, p. 5.

<sup>5</sup> Wiegand, *Porosarchitektur*, pp. 110-114; Judeich, *Topographie*<sup>1</sup>, pp. 64, 66, 225-228; D'Ooge, *Acropolis*, pp. 66, 70, 78-92; Kavvadias and Kawerau, *Ausgrabung der Akropolis*, pp. 108-114; Hill, *A.J.A.* 1912, pp. 536-537, 556-557; Collignon, *Parthénon* (1911), pp. 5-9; ed. min. (1914), pp. 22-37; Dickinson, *Acropolis Museum*, I, pp. 6-9; Weller, *Athens*, pp. 271-274; Lechat, *Rev. Ét. anc.* 1913, pp. 125-130; Judeich, *Hermes*, 1929, p. 406 (the allusion to resumption of work by Themistokles or Kimon must be a clerical error); *Topographie*<sup>2</sup>, pp. 68, 70, 248-251 (with a possibility that the marble revision was undertaken before 490); Rodenwaldt and Hege, *Acropolis*, p. 26. Also, in more general terms, Beloch, *Gr. Gesch.* II 1, p. 205; Adcock, *Cambridge Ancient History*, IV, pp. 66-67; Seltman, *Athens, Its History and Coinage*, p. 94.

<sup>6</sup> Dörpfeld, *Ath. Mitt.* 1902, p. 411.

<sup>7</sup> Walter, *Athen. Akropolis*, pp. 68-72.

that the sherds in the fill were too late for the decade of Kleisthenes.<sup>1</sup> This theory, though close to the truth, has found no support.

(III) Later investigation has shown that Dörpfeld's equations contain two notable fallacies which destroy their validity, and disrupt the coincidences on which he based his interpretation. In the first place, the eventual publication of Kawerau's plan of the excavations, with his accompanying remarks, shows that, with regard to the west elbow of the so-called pre-Persian ashlar retaining wall (3), "its foundations at the southwest corner and a part of the south face rest on the foundations of the south citadel wall. The latter, therefore, at least in its lower courses, is older than this poros wall. . . . In the foundation of the poros wall appear, in the lowest courses immediately above the socle of the Kimonian south wall, some limestone blocks and, furthermore, two fragments of marble column drums of the Older Parthenon with the same beginnings of the flutes." Kawerau, therefore, contended that the eastern and western sections of the poros ashlar retaining wall (3), though probably contemporaneous as Dörpfeld had assumed, were Kimonian rather than pre-Persian, erected in order to support temporarily the earth terraces (perhaps endangered by the collapsing of the polygonal retaining wall 2) during the erection of the Kimonian south wall (5).<sup>2</sup> On the other hand, we have the more subjective but nevertheless conclusive argument that Hill's restoration of the Older Parthenon has eliminated the second of the two deductions made by Dörpfeld. There never was a discrepancy between a poros (and Kará limestone) crepidoma and the marble colonnade, for the reason that the crepidoma was actually of marble like the colonnade, with a transitional Kará limestone *bottom step* analogous to that of poros in the "Theseum" and that of blue marble at Rhamnus. The existence of the marble step and stylobate, pointed out by Ross but overlooked by Dörpfeld, was independently demonstrated by Hill. We are now confronted, not with two projects, but with a unified design and a single building period, and must restate the equation (one rather than two) in the following terms:

(c) polygonal retaining wall = calcined marble drums.

It now remains to ascertain the date of this construction, which was in any case earlier than 480 B.C. (any later date being excluded by the traces of fire).

(F) This unity of design was perceived by Heberdey,<sup>3</sup> who preferred the decade of Kleisthenes on the ground that 490–480 B.C. was a period for strengthening rather than weakening the fortifications;<sup>4</sup> before Marathon, he would have preferred about 500 B.C., to diminish the length of the building period as much as possible, but admitted the weight of Dörpfeld's arguments for Kleisthenes and 510 B.C.<sup>5</sup> The theory was complicated, furthermore, by diverse interpretations of the two ends of the ashlar retaining wall (3). Observing Kawerau's evidence that its west elbow cannot have been earlier than Kimon's south wall (4),<sup>6</sup> Heberdey argued that it

<sup>1</sup> Furtwängler, *Aegina*, pp. 353, 496–497.

<sup>2</sup> Kavvadias and Kawerau, *Ausgrabung*, pp. 118, 120; Heberdey, *Porosskulptur*, p. 233.

<sup>3</sup> Heberdey, *Porosskulptur*, pp. 231–240.

<sup>4</sup> I.e., the Old Propylon, which he rightly assigns to the same building program as the Older Parthenon, would have weakened the west defenses of the Acropolis (*ibid.*, p. 230).

<sup>5</sup> *Ibid.*, pp. 229, 230, 240.

<sup>6</sup> *Ibid.*, p. 233.

could not have been a patch facing the Pelasgian wall, which is particularly well preserved at this point;<sup>1</sup> he could find no explanation for it other than a conjectural enlargement of the masons' stoneyard during the Periclean period.<sup>2</sup> On the other hand, while admitting that the evidence for the east part of the ashlar retaining wall is not contrary to a post-Persian date,<sup>3</sup> Heberdey stressed Kawerau's observations that it runs under the protruding upper part of the south wall (5) and, therefore, must at least be pre-Periclean. He concluded that the east part of the ashlar wall was pre-Persian,<sup>4</sup> and to explain its existence developed his theory of the great ramps, at first supported on the polygonal retaining wall (2), and then extended



FIG. 3.—VIEW OF SOUTHEAST CORNER OF OLDER PARTHENON FOUNDATION

Phot. German Institute, Athens, Akr. 71

with the support of the east part of the ashlar retaining wall (3), both of these being approximately of the same date. And as confirmation of the great ramps and of the theory that the lofty basement was to have remained exposed to view on the south flank, Heberdey cited the vertically drafted margin at the southeast corner (Fig. 3), descending fourteen courses or 6.90 m. below the marble crepidoma of the present Parthenon. His theory has been adopted by some of the most recent writers,<sup>5</sup> but is rejected by others.<sup>6</sup>

(G) Schrader, in reviewing Heberdey, raised the argument (later employed by

<sup>1</sup> *Ibid.*, p. 235.

<sup>2</sup> *Ibid.*, p. 238.

<sup>3</sup> *Ibid.*, p. 235.

<sup>4</sup> *Ibid.*, p. 234.

<sup>5</sup> Fougères, *Parthénon* (1926), p. 9; Robertson, *Greek and Roman Architecture*, pp. 113-114; Körte, *Phil. Woch.* 1931, 112; Langlotz, *Vasen der Akropolis*, II, p. vii (preferring about 500 B.C. as the date on account of the potsherds; see p. 439, n. 2).

<sup>6</sup> Judeich, *Topographie*,<sup>2</sup> p. 250, n. 1; cf. Schede, Walter, and Rodenwaldt, as noted above.

Walter, as noted above) that it would be most unlikely that the Peisistratids should begin a great Olympieum in the lower city and remain contented with the modest poros temple on the Acropolis. He was also impressed by the "archaic" proportions of the plan, with 6:16 columns as in the Olympian Heraeum. And therefore, without conclusive arguments, he was tempted to regard the Older Parthenon as a Peisistratid creation of 530-520 B.C.<sup>1</sup>

(H) Heberdey's theory, however, arouses serious doubts. In the first place, Dörpfeld's original objection to placing the marble Older Parthenon as early as the sixth century still holds its force: the building period would be excessively long in proportion to the work accomplished, and "Pentelic marble suits better the time after Marathon, Parian that of Kleisthenes."<sup>2</sup> These objections would apply even more strongly to a Peisistratid date. The arguments against monumental building in the decade 490-480 B.C., or the assumption that the Peisistratidae should have displayed greater respect toward Athena, are purely subjective. There is no adequate evidence for the great ramps: the stratification was horizontal, according to all observers and photographs, with no detected inclination from east to west.<sup>3</sup> The theory that the basement was to have been exposed to the great height of fourteen courses, as suggested by the vertically drafted southeast corner, is controverted by the appearance of the foundation itself. For the blocks are closely jointed only in the three upper courses (under the recessed coping); below these the blocks often touch only at the upper anathyrosis band, and sometimes even this is lacking so that the joints are wide open from bottom to top; the gaps, according to Ross, are of 1-2 finger widths;<sup>4</sup> thus if the irregular faces of the blocks had ever been trimmed back they would nevertheless have presented gaping joints. The true proposed ground level is indicated, not by the bottom of the vertically drafted corner (which was intended merely as a guide to prevent contraction of the dimensions toward the top), but by the horizontally drafted margin ten courses higher.<sup>5</sup> The differences between the west and east parts of the poros ashlar wall (3), namely, the greater thickness (1.70 m. as against 1.20 m.) and the deeper foundations (going down to bed rock instead of resting merely on the humus stratum) at the west, are in reality due solely to the exigencies of the site. At the west, the poros wall (3) was built outside rather than inside the Pelasgian wall (1); the humus stratum naturally did not exist at this point, and the wall had to be founded on bed rock, and with this greater depth was made thicker. But in its upper portions the west part of the poros wall is reduced to 1.20 m. in thickness, like the east part; the construction of the two

<sup>1</sup> Schrader, *Deutsche Literatur-Zeitung*, 1922, pp. 683-684; cf. 1930, p. 1562, where he complains that Weickert omits the Older Parthenon from the survey of archaic architecture.

<sup>2</sup> Dörpfeld, *Ath. Mitt.* 1902, p. 411.

<sup>3</sup> Kawerau, it is true, suggests that since the natural rock, and therefore the base of the polygonal terrace wall, rose in level from east to west, the earth might have followed this rock slope (*Ausgrabung*, p. 114). But comparison of Dörpfeld's two sections at the middle and east end of the Parthenon hardly permits the fine distinction between the levels of the top of stratum III suggested by Heberdey (*Porosskulptur*, pp. 236-237).

<sup>4</sup> Ross, *Arch. Aufs.* I, p. 89; Ziller, *Zeitschr. f. Bauwesen*, 1865, p. 40.

<sup>5</sup> Dörpfeld, *Ath. Mitt.* 1892, p. 165; 1902, p. 395; Heberdey (*Porosskulptur*, pp. 237-238) dismisses this sunken band too briefly. Judeich's objection to Heberdey's theory was based chiefly on this improbable exposure of the basement.



portions is identical; both, therefore, must have been of the same date. And while it is true that the east part of the ashlar retaining wall (3) runs under the overhanging upper part of the south wall (5) and so must have been pre-Periclean, it is equally certain that the west elbow of the ashlar wall (3), resting on Kimon's south wall (4), cannot have been pre-Kimonian. In other words, the poros wall (3), instead of forming two separate units, pre-Persian at the east and Periclean at the west, must have been a homogeneous Kimonian structure. For such reasons, most of which I had considered even before the publication of Heberdey's theory, it now becomes necessary to adopt a different conclusion as to the period of equation (c), namely, that the entire work was a unified design executed in the decade 490-480 B.C. "Now the poros Parthenon disappears as a myth, its sole basis, an assumed incongruity between a limestone stylobate and marble columns, and an assumed coëval terrace wall, eliminated because there never was a limestone stylobate, and because the terrace wall contains fragments of marble columns of the very temple which Dörpfeld thought it was intended to support. And the Older Marble Parthenon emerges as the only predecessor of the present temple,<sup>1</sup> the creation of Themistokles and Aristeides after the battle of Marathon, a memorial of victory over the Persians which the Persians themselves demolished upon their return."<sup>2</sup>

Thus we have six theories current at the present day:

- (C) two Older Parthenons, poros ca. 510, marble 490 B.C. (Dörpfeld, 1902)
- (D) " " ca. 530, " 510 B.C. (Walter, 1929)
- (E) " " 490, " ca. 485 B.C. (Furtwängler, 1906)
- (F) one Older Parthenon, marble ca. 510 B.C. (Heberdey, 1919)
- (G) " " ca. 530 B.C. (Schrader, 1922)
- (H) " " ca. 490 B.C. (Dinsmoor, 1922)

On architectural grounds we have found that there was but one Older Parthenon, that of marble, so that theories C, D, and E should be abandoned. There remain theories F, G, and H, differing only in that the marble design would be dated respectively about thirty, fifty, or ten years before the Persian destruction. The architectural grounds, while not absolutely conclusive, point to the greater probability of the latest of these dates (H).

## 2. STRATIGRAPHICAL EVIDENCE

In accordance with the chronological system proposed above, the terrace filling south of the Parthenon should be divisible into the following eight well defined strata from top to bottom:

V, the Periclean fill behind wall 5 (447-438);

IV, the later Kimonian fill behind wall 4 (469-461);

<sup>1</sup> This is not the place for an examination of the problem of Buschor's "Ur-Parthenon" (cf. Buschor, *Ath. Mitt.* 1922, pp. 96-98; Noack, *Eleusis*, pp. 298-300; Schrader, *Jb. Arch.* I. 1928, pp. 70, 85-89; *Deut. Literatur-Zeitung*, 1930, p. 1562-1563; Weickert, *Arch. Arch.*, pp. 19-21, 99, 101; Walter, *Akropolis*, pp. 46, 71), which is opposed by Dörpfeld (*Phil. Woch.* 1929, 1247); Judeich (*Hermes*, 1929, p. 395, n. 1; *Topographie*<sup>2</sup>, pp. 249 with n. 1, 458), and Körte (*Phil. Woch.* 1931, pp. 111-118).

<sup>2</sup> Dinsmoor, *Art and Archaeology*, XIV, 1922, p. 237; cf. Anderson, Spiers, Dinsmoor, *Architecture of Ancient Greece*, chronological table (489 B.C.), and *A.J.A.* 1932, p. 311, n. 3. The theory was first presented in my lectures of 1920 at the Metropolitan Museum.



- III, the earlier Kimonian fill behind wall 3 (469-461);
- IIc, the latest pre-Persian fill overflowing from wall 2 (490-480);
- IIf, the main pre-Persian fill behind wall 2 (490-480);
- IIa, the pre-Persian fill in the V-shaped trench (490-480);
- Ib, the pre-Persian accumulation behind wall 1 (before 490);
- Ia, the Mycenaean and geometric accumulation behind wall 1.<sup>1</sup>

Of all the various objects contained in this débris,—architectural blocks, marble and terracotta roof tiles, fragments of sculpture, inscriptions, bronzes, terracottas, and potsherds,—the most vital perhaps are those of the last category. For pieces of larger structures and works of art would presumably have been destroyed and buried only after important alterations of design or cataclysms of war.<sup>2</sup> But the fragile painted vases were exposed to continual breakage. Hence it might logically be presumed that, while the larger objects buried in any given deposit might have been created at a much earlier period, the potsherds on the contrary would have accumulated (though in diminishing proportions) right down to the very date of the deposit. For this reason we may adopt the potsherds as our scale, following the principle that any stratum must be as late as its latest sherd.

Now for the first time the completion of the great publication of the Acropolis vases, by Graef and Langlotz,<sup>3</sup> permits one to test, on fairly accurate stratigraphical grounds, the various proposals as to the dates of the strata.<sup>4</sup> To do this, however, our first task must be a reconstruction of an inventory of the sherds discovered south of the Parthenon, on the basis of the very incomplete records now available.<sup>5</sup>

<sup>1</sup> The subdivision of stratum I is in accordance with the sketch by Kawerau, cf. Wolters in Graef, *Vasen der Akropolis*, I, p. xix and fig. 2. The following concordance will explain the slight discrepancies from Dörpfeld's and Heberdey's numbers:

Dörpfeld's III = Heberdey's IIIc = my III			
“ II	{	“ IIIb	“ IIc
		“ IIIa	
		“ II	
“ IIf		“ IIf	“ IIa

<sup>2</sup> Heberdey has undertaken to examine the terraces on the basis of the fragments of poros sculptures (*Porosskulptur*, pp. 1-9, 231-240).

<sup>3</sup> Graef and Langlotz, *Die antiken Vasen von der Akropolis zu Athen* (2 vol. text and 2 vol. plates), 1909-1933.

<sup>4</sup> Such an investigation had been suggested by Wolters in 1925 (in Graef, *op. cit.*, I, p. xxi). Langlotz concludes, however, that “the sherds do not permit us to advance beyond the results obtained from the building stones themselves” (II, p. ii).

<sup>5</sup> This analysis (for which the preliminary list of sherds of known provenance was prepared by Miss Constance H. Curry), was commenced before the appearance of the third (and final) part of Vol. II of the *Vasen der Akropolis* (1933), with the valuable preface by Langlotz, who likewise analyzes the sherds discovered south of the Parthenon. Though a second analysis might now seem to be superfluous, comparison shows that there were several omissions in the Langlotz lists (and, in a few cases, inclusions of sherds for which the text gives no authority); and another reason for republication is the fact that several areas of interest in this connection are not discussed by Langlotz (e.g., “D” and “D2”), nor did he investigate thoroughly the older reports by Ross, Wolters, and Kavvadias. In giving these revised lists, furthermore, it has seemed desirable to designate with “P” all sherds which were noted as having been found in “Perserschutt” (though it must be recalled that this designation may equally well mean “Tyrannenschutt”) and also to indicate by asterisks (\*) all sherds which are mentioned as having been burnt in a conflagration. Again, the lists have been subdivided in accordance with the days of discovery, on the principle that the sherds found on later days in a given area are more likely to have been at lower levels.

Ross states that the surface of the ground in 1835 was at the level of the second marble step of the Parthenon (and even higher at the west on account of the earthwork of 1826).<sup>1</sup> He cleared away the late débris, wherever the masses of fallen blocks left him free to do so, along the entire south flank, and here, furthermore, he excavated two pits. One of these, in 1835, near the southwest corner (below the west angle column of the Parthenon),<sup>2</sup> revealed natural rock at a depth of 5.50 m. or twelve poros courses below the marble crepidoma. The other pit, in 1835-1836, at the southeast corner,<sup>3</sup> apparently did not go very deep at the corner itself (only five



FIG. 4.—PLATE BY THE BRYGOS MASTER, DISCOVERED BY ROSS  
From Graef and Langlotz, *Vasen der Akropolis*, II, pl. 1

poros courses below the marble); but part of this trench, which extended to the south wall, seems to have gone down to bed rock, and in any case it penetrated below the Periclean stratum (V) and into the "Perserschutt." As Ross admits, "Unfortunately at that time the potsherds were not so carefully observed as the larger finds."<sup>4</sup> He states that "the booty is very rich in sherds of very beautiful painted vases,"<sup>5</sup> and alludes to "many sherds of vases with black figures on red ground,"<sup>6</sup> but cites only one of these, the foot of a "little-master" kylix with an inventory inscription of Athena (I 1920).<sup>7</sup> Of more importance, because they were of a later period and, nevertheless, were definitely found below or in the burnt débris ("Perserschutt"),

<sup>1</sup> Ross, *Arch. Aufs.* I, pp. 82-83.

<sup>2</sup> *Ibid.*, p. 88, pl. V 2; the text disagrees with the plate in stating that it was between columns 1 and 2.

<sup>3</sup> *Ibid.*, pp. 102, 104-106, 106-108, 109-112, 138, pl. V 3-4.

<sup>4</sup> *Ibid.*, p. 139.

<sup>5</sup> *Ibid.*, pp. 107-108.

<sup>6</sup> *Ibid.*, p. 106.

<sup>7</sup> *Ibid.*, p. 108; the number (I 1920) is that of the publication in the *Vasen der Akropolis*, where, however, it was not identified by Graef.

were three red-figured pieces, a plate by the Brygos painter (II 20),<sup>1</sup> a complete "owl skyphos" with fragments of others, and part of a terracotta many-spouted lamp.<sup>2</sup> "These valuable fragments were taken out from a great depth (10 to 12 feet) against the foundation of the temple, from an earth stratum which was mixed with charcoal, broken archaic bronze figurines, broken painted roof tiles, and other débris; this was the rubbish from the sanctuaries and buildings destroyed by the Persians on the Acropolis."<sup>3</sup> Any argument that these sherds might have been mixed with Persian débris at a later date, toward 460 B.C.,<sup>4</sup> during the erection of the south wall, is controverted by the burnt condition of the plate, which had suffered in the conflagration. As Ross points out, "Special importance seems to reside in the skyphos, the lamp, and the burnt sherd [of the plate]; for they prove (even though in the same excavation were found sherds with black figures, which might have belonged to earlier decades) that at the time of the burning of the old temple, and so during the Persian wars, ceramics with red figures on black ground were in use, and they show to what power the drawing had attained."<sup>5</sup> Thus the identification of the "Perserschutt" in turn thrust back the beginnings of the red-figured style far earlier than 460 B.C.,<sup>6</sup> where it had been placed by contemporary archaeologists. But these observations were ignored by Gerhard and Jahn, and were regarded by Kramer as paradoxical;<sup>7</sup> in consequence, the study of Attic vase-painting was retarded for half a century,<sup>8</sup> and Ross was not fully justified until the great excavation of 1888. Even as late as 1920 Langlotz wrote: "Of all the red-figured vases of the ripe severe style that have come to light on the Acropolis, only the plate made known by Ross can be dated with practical certainty before 480 B.C."<sup>9</sup> And the "owl skyphos," which was equally certainly found below Persian débris, has been so completely forgotten that the numerous examples of this type have been most recently assigned to the fourth century, the late fifth century, the third quarter of the fifth century, or the second half of the fifth century.<sup>10</sup> Langlotz alone comes to the right conclusion when he assigns them "without exception from the period about 500, datable by means of the shape."<sup>11</sup> A comparison of the few known facts of discovery independently brought me to the same conclusion. Several such "glaukes" from the

<sup>1</sup> Ross, *op. cit.* I, p. 140, pl. X. The plate was easily identified; cf. Dümmler, *Bonner Studien*, p. 74; Klein, *Euphronios*, pp. 38, 52; Hartwig, *Meisterschalen*, pp. 338-339; Tonks, "Brygos," in *Mem. Amer. Acad. Sc.* XIII, 1904, p. 113, no. 42; Hoppin, *R. F. Vases*, I, p. 141, no. 103; Langlotz, *Zeitbestimmung der strengrotfigurigen Vasenmalerei*, p. 99; Beazley, *Att. Vasenmaler*, p. 182, no. 85; Graef and Langlotz, II 20.

<sup>2</sup> *Ibid.*, pp. 139-140, pl. IX. The lamp seems to be otherwise unpublished, and the skyphos appears to have vanished from the Acropolis (it is not included in the Graef-Langlotz publications).

<sup>3</sup> *Ibid.*, II, p. 330; cf. I, p. 139.

<sup>4</sup> Furtwängler formerly even argued that the date *ante quem* was merely the beginning of the Periclean temple in 447 B.C. ("Bronzefunde aus Olympia," *Abh. Berl. Akad.* 1879, iv, p. 6 = *Kleine Schriften*, I, p. 341, n. 3; cf. however, 50. *Berl. Winckelmannsprogramm*, 1890, p. 162).

<sup>5</sup> Ross, *op. cit.*, I, p. 140.

<sup>6</sup> *Ibid.*, I, pp. vi-vii, 139-141; II, pp. 330-331.

<sup>7</sup> Kramer, *Arch. Zeit.* 1852, *Anz.* 198.

<sup>8</sup> Cf. Graef, *Jb. Arch. I.* 1893, *Anz.* 13-14.

<sup>9</sup> Langlotz, *Zeitbestimmung*, p. 99.

<sup>10</sup> Pottier, *Vases antiques du Louvre*, III, p. 294, no. G 618; Orsi, *Mon. Ant.* XXIII, p. 914, n. 1; Robinson, Harcum and Iliffe, *Catalogue of the Greek Vases in Toronto*, I, p. 183, nos. 373-375; Pellegrini, *Vasi dipinti delle necrop. felsinee*, p. xlvi; Beazley, *CVA. Oxford*, I, p. 40, pl. XLVIII 9, and II, p. 114, pl. LXII 1-2; Miss Lamb, *CVA. Cambridge*, I, p. 35, pl. XXXIV 3.

<sup>11</sup> Langlotz, *Gr. Vasen in Würzburg*, p. 119.

Acropolis were listed by Graef and Langlotz (II 529-537, and about 30 uncatalogued fragments), and, while none of them can be identified with the Ross material, the only one of recorded provenance (II 529) was found on October 8, 1888, in "Perserschutt" (presumably, according to the date, toward the southwest corner of the Parthenon), while another (II 531) was injured by fire. Again, in the Corinthian excavations of 1928, in a group of graves otherwise containing only material of the last quarter of the sixth century and the first quarter of the fifth, Shear found two of these owl skyphoi, one of them in grave XXX with two black-figured Attic



FIG. 5.—OWL SKYPHOS FOUND BY ROSS, AND FRAGMENTS FROM "PERSERSCHUTT"  
From Ross, *Arch. Aufs.* I, pl. IX, and Graef and Langlotz, *Vasen der Akropolis*, II, pl. 40

skyphoi.<sup>1</sup> Two other owl skyphoi were also found together with black-figured ware in graves VI and CLVI at Corinth.<sup>2</sup> An example found at Marion has been assigned to the fourth century merely because this was the greatest period of importation of Attic pottery into Cyprus;<sup>3</sup> but this seems an inadequate reason, and the graves excavated at Marion date from various periods, archaic and classical.<sup>4</sup> While some of the more loosely executed examples may be fairly late,<sup>5</sup> it seems not unreasonable to infer that the type was established and the better examples painted at about 490 B.C.,<sup>6</sup> perhaps with some relationship to the introduction of the olive wreath en-

<sup>1</sup> Shear, *A.J.A.* 1928, pp. 493-495.

<sup>2</sup> I am indebted to Dr. and Mrs. Shear for permission to mention these yet unpublished pieces.

<sup>3</sup> Gjerstad, *Illustrated London News*, 1929, Nov. 9, p. 808. <sup>4</sup> Woodward, *J.H.S.* 1929, p. 237.

<sup>5</sup> For Apulian imitations, see *CVA. Italia*, pl. 295, 6-7.

<sup>6</sup> The most complete bibliography, with a list of about 106 examples, has been compiled by Robinson (*l.c.*). To these we may add, besides the Acropolis pieces, 35 others: two at Angers (Valotaire, *Rev. Arch.* XVII, 1923, pp. 64-65, no. 26-27), two others at Oxford (Beazley, *CVA. Oxford*, p. 114, pl. LXII 1-2), twelve in Berlin (Furtwängler, *Vasensammlung im Antiquarium*, pp. 729, 733-734, nos. 2587, 2595-2605; cf. Schöne, *Comm. Mommseni*, p. 654, no. 12; Hackl, "Merkantile Inschriften," in *Münch. Archäol. Studien*, p. 53, no. 594, cf. p. 73), five at Würzburg (Langlotz, *Gr. Vasen in Würzburg*, p. 119, nos. 614-618, pl. 217), one in Vienna (Masner, *Antike Vasen im K.K. Oester. Museum*, p. 59, no. 379), two at Goluchow (Beazley, *Greek Vases in Poland*, p. 63; Bulas, *CVA. Pologne*, p. 27, pl. 40, 4-5), three at Copenhagen (Blinkenberg and Johansen, *CVA. Danemark*, p. 123, pl. 161, 3-5), fragments at the Hague (Scheurleer, *CVA. Pays-Bas*, pl. 87, 1, 3), one from Camarina (*Mon. Ant.* XIV, p. 848, fig. 59), one from Caulonia (*Mon. Ant.* XXIII, p. 914, fig. 154), two others at Corinth (graves VI and CLVI, unpublished), one from Marion in Cyprus (Gjerstad, *Ill. London News*, 1929, Nov. 9, p. 808), one at Michigan (Van Ingen, *CVA. Michigan*, p. 31, pl. 15, 2), and one in Providence (Luce, *CVA. Providence*, p. 31, pl. 23, 3).

circling Athena's helmet on the Athenian coins, likewise a symbol of the victory at Marathon.<sup>1</sup>

Other excavations were carried out along the south flank of the Parthenon in 1845 by Pittakis; but these were limited to a general lowering of the surface level,<sup>2</sup> continued in 1859–1860.<sup>3</sup> In 1864 Ziller sank two pits against the Parthenon foundation, one at the southeast corner (where Ross had not reached the bottom) and the other between columns 5–6 from the east, both descending 10.77 m. or twenty-two poros courses below the marble crepidoma;<sup>4</sup> no record was made of any sherds found. The surface level, between 1860 and 1888, was between six and eight poros courses below the marble crepidoma;<sup>5</sup> and some stones of the Ergasterion were even then visible.<sup>6</sup> In other words, this part of the Acropolis presented in 1888 the same general appearance that it had received by 1860; and our knowledge of the chronology of red-figured vase-painting had hardly advanced beyond the stage that it had reached before 1835.

It was with great surprise, therefore, that Kavvadias found advanced red-figured vases in 1886–1888 mingled with the Persian debris.<sup>7</sup> The finds on the Acropolis now definitely established the fact that the severe (ripe archaic) red-figured style was already in full development by 480 B.C., and that the origins of the style must recede far back into the sixth century; other comparisons have established the date of the beginning as about 530 B.C. In short, the chronological development of red-figured vases is now well established, with few exceptions;<sup>8</sup> and we may now reverse the process, employing the chronological scale thus ascertained for the dating of the strata.

For the sherds found during the earlier stages of the great excavation of 1888, however, we are dependent upon the brief reports by Wolters<sup>9</sup> and Kavvadias.<sup>10</sup> It seems almost unbelievable, in these days of carefully recorded observations of all minor finds, that during the great Acropolis excavations of 1885–1890 the potsherds were so neglected. Of the 4313 vases (including pinakes) described by Graef and Langlotz,—and these include a vastly greater number of individual sherds,—by far the majority are totally without provenance. Apart from 220 sherds found in earlier excavations,<sup>11</sup> the recorded yield of the excavations of 1885–1890 consists merely of 550 sherds.<sup>12</sup>

<sup>1</sup> Cf. Seltman, *Athens, Its History and Coinage*, pp. 102–109.

<sup>2</sup> Kavvadias and Kawerau, *Ausgrabung*, p. 12.

<sup>3</sup> *Ibid.*, pp. 14, 16.

<sup>4</sup> Ziller, *Zeitschr. f. Bauwesen*, XV, 1865, pp. 35–54, pl. A, B.

<sup>5</sup> This is shown by Ziller's sections (pl. B) and by Dörpfeld's photographs (*Ath. Mitt.* 1892, pl. IX; 1902, pl. XIII), in which the surface grass plainly appears three to four courses below the proposed Older Parthenon grade level (as indicated by the strongly marked ridge at the bottom of the fourth course below the marble crepidoma).

<sup>6</sup> Dörpfeld, *Ath. Mitt.* 1888, p. 224.

<sup>7</sup> Studniczka, *Jb. Arch. I.* 1887, p. 159; Winter, *ibid.* p. 229; Kavvadias, *Δελτ. 'Αρχ.* 1888, pp. 43, 44, 83; Kavvadias and Kawerau, *Ausgrabung*, p. 38; Graef, *Jb. Arch. I.* 1891, p. 43; 1893, *Anz.* 14–15; Wolters, in Graef, I, pp. xi, xxi.

<sup>8</sup> One such exception is the "owl skyphos" discussed above.

<sup>9</sup> Wolters, *Ath. Mitt.* XII, 1887, pp. 386–388; XIII, 1888, pp. 107–110, 225–229, 437–442.

<sup>10</sup> Kavvadias, *Δελτ. 'Αρχ.* 1888, pp. 10–13, 30–32, 43–45, 54–55, 81–83, 101–105, 122–125, 153–154, etc.

<sup>11</sup> These include the 2 identified above as found in 1836 by Ross, 4 east of the Parthenon in 1863/4, 44 northeast of the Propylaea in 1864, 2 others of 1863/4, 100 under the Museum in 1867, 1 east of the Parthenon in 1873, 8 south of the Propylaea in 1875, 1 dated 1877 and 2 from the north wall in 1877 identified by Wolters (Graef, I, p. xvi), 48 east of the Parthenon in 1882/3, and 8 uncertain.

<sup>12</sup> These include 1 near the north wall in 1885, 6 merely dated 1886, 62 east of the Parthenon in 1886, 1 east of the Parthenon in 1887, 3 at the "tholos" in 1887, 223 south of the Parthenon in 1888 (as dis-



For these reasons it becomes imperative to scan even the summary reports for casual allusions to sherds. Thus we find that Wolters mentions for 1888 the following twenty items: January–March (*op. cit.* pp. 387–388), II 439, 195, 1051, 1367, 1354; April–May (pp. 108–110),<sup>1</sup> I 202, 222, 345A, 601b, 601a right piece, II 325, 439; June–July (pp. 227–228), I 732, II 504, 1296, an unidentified onos, and a complete Mycenaean cup;<sup>2</sup> August–December (p. 441), I 2560, II 3, 1345. Similarly the monthly reports of Kavvadias for 1888 mention the following twenty-five items: Jan. 13–Feb. 12 (*op. cit.* pp. 12–13),<sup>3</sup> α) II 1051, β) possibly I 2509 or 2585, γ) II 352d, δ) possibly I 2450 or 2458, ε) I 601a right piece; Feb. 13–March 12 (pp. 30, 32), I 202 and 222, α) II 439, β) II 325, γ) II 1354, δ) II 1367, ε) I 2570a; March 13–April 12 (p. 44), ε) II 1295, ζ) II 762; May 13–June 12 (p. 83), I 1408 and 732; June 13–July 12 (pp. 102–103), α) I 1220, β) I 2519, γ) II 1296, δ) I 607r, ε) I 2582; Aug. 13–Sept. 12 (p. 154), α) II 589 left piece, β) II 352a, γ) I 2560, δ) II 238. Of these, eleven are duplicated notices; thus we are actually concerned with thirty-four sherds. Combining the two lists, and inserting the statements as to provenance contained in these reports, we obtain the following list:

Jan. 13–Feb. 12, above the poros stratum southeast of the Parthenon and also in the fill behind the south wall (without proper observation of the strata so that they probably belong both to the Kimonian and to the Periclean strata IV and V):<sup>4</sup> I 601a right piece, possibly I 2450 or 2458, possibly I 2509 or 2585; II 352d, 1051.

Feb. 13–March 12, in the fill southeast of the Parthenon, behind the south wall but beyond the poros stratum (i.e., south of the polygonal wall, and so in strata III, IV or V): I 2570a; II 325, 439, 1354, 1367.

Feb. 13–March 12, in the humus stratum (Ia) at the same place: I 202, 222.

March 13–April 12, in the fill southeast of the Parthenon, between the retaining wall and the south wall (and so in strata III, IV or V): II 762, 1295.

January–March, in uncertain location southeast of Parthenon: II 195.

April–May, in the fill behind the south wall, southeast of the Parthenon or east of the Museum (uncertain strata): I 345A, 601b; II 439 fragment.

May 13–June 12, in the fill south of the east end of the Parthenon, between the poros stratum and the south wall (i.e., south of the polygonal wall, and so in strata III, IV or V): I 732, 1408.

June 13–July 12, under the poros stratum south of the middle of the Parthenon and also beyond this toward the south wall (i.e., in strata IIb, IIc, III or IV): I 607r, 1220, 2519, 2582.

June–July, in the fill south of the middle of the Parthenon: II 504.

*Id.*, in the humus (stratum Ib): II 1296, an unidentified onos.

*Id.*, in the humus (stratum Ia): a complete Mycenaean cup.

Aug. 13–Sept. 12, between the west half of the Parthenon and the south wall: I 2560; II 238, 352a, 589 left piece.

August–December, in uncertain locations along the south wall: II 3, 1345.

cussed below), and 254 west of the Parthenon in 1888. Wolters mentions a loutrophoros found at the north wall in 1886 (Graef, I, pp. xi, xxi), 119 sherds east of the Parthenon in 1886 (*ibid.*, p. xiv), 28 sherds at the “tholos” in 1887 (*ibid.*, p. xii); but not all of these can now be identified.

<sup>1</sup> For the identification of I 202 and 222 with the finds mentioned in *Ath. Mitt.* pp. 108–109, Δελτ. 'Αρχ. 1888, pp. 30–31, and Kavvadias-Kawerau, *Ausgrabung*, p. 104 (cf. pl. E<sup>1</sup>, at level 141.00 at lower left corner), see Wolters, in Graef, I, p. xxxiv with note 1.

<sup>2</sup> Wolters describes the onos fragment as a so-called cover tile, but refers, for the form, to *Jb. Arch. I.* II, 1887, p. 69, thus showing that it was an onos. The Mycenaean cup, illustrated by Wolters, does not appear in Graef and Langlotz (cf. Wolters, in Graef, I, p. xxxiv).

<sup>3</sup> Allowance is made for the reports dated by the Julian calendar.

<sup>4</sup> In fact, Wolters (*op. cit.* p. 388) expressly says that some of the sherds were found in the upper strata mixed with marble chips; and II 1051 of about 450 B.C. could not have been in an earlier deposit than that of Pericles.

Of these thirty-four sherds, only eight (I 202, 222, 732, 1408, 2560; II 3, 439, 504) were identified by Wolters, Graef and Langlotz.<sup>1</sup> It has now been possible to identify twenty-two additional sherds,<sup>2</sup> of which only five, as we shall see, were more exactly designated at the moment of discovery.<sup>3</sup> In other words, from these old reports we obtain new clues as to the provenance of eighteen of the published fragments, one from Ross and the others from Wolters and Kavvadias.<sup>4</sup>

The more careful observation of the sherds was initiated by Wolters and Graef on June 4, 1888, when, fortunately for our purpose, most of the south flank of the Parthenon yet remained unexcavated. Work had already been started at the east end of this area, and had proceeded as far as the east wall of the Ergasterion, to a considerable depth; <sup>5</sup> indeed, the site of Ziller's great pit, extending  $7\frac{1}{2}$  m. from the corner of the foundation, had been cleared down to the rock.<sup>6</sup> The eastern half of the length of the Parthenon was subdivided into lettered sections, "A" and "C" being inside, and "B" and "D" outside, the polygonal retaining wall (2) which nearly bisects the length of the area (Fig. 7). The western half was not so subdivided; but (since "E" was reserved for an area still farther west) we may apply "C2" and "D2" respectively to the strips inside and outside the polygonal wall along the west half of the Parthenon's flank. A special section is the triangle near the southwest corner of the Parthenon, composed by the Pelasgian wall (1) and the two arms of the poros ashlar retaining wall (3). Each of these seven sections will first be considered separately; afterwards we may combine the resulting evidence for the successive strata.

At the time of the excavation, because of the prevailing theory that the Older Parthenon was Kimonian, all the strata above I and below V were regarded as Kimonian, with, at most, a few years difference between those north and south of the polygonal retaining wall (2). As Dörpfeld afterwards stated, "All strata with fragments of sculpture and building stones were then designated as 'Perserschutt,' regardless of whether they were found behind the polygonal retaining wall or behind the poros ashlar retaining wall or behind the south citadel wall; regardless of whether the fragments showed or did not show traces of fire; regardless of whether they consisted solely of poros or whether marble fragments were intermingled with them. Exact segregation of the finds in accordance with the various terraces was unfortunately not carried out, because it was regarded as superfluous; only in the case of a few objects is the provenance so exactly known that the attribution to one of the various periods is now possible."<sup>7</sup> It is no wonder, after such a revelation, that the

<sup>1</sup> For I 2560 they give no provenance.

<sup>2</sup> Namely, I 345A, 601a right, 601b, 607r, 1220, 2519, 2570a, 2582; II 195, 238, 325, 352a, 352d, 439 fragment, 589 left piece, 762, 1051, 1295, 1296, 1345, 1354, 1367. These do not include the four uncertain pieces, namely the Mycenaean cup, the onos, I 2450 or 2458, or I 2509 or 2585. The apparent discrepancy in the case of I 601a, which Graef reports as found on Sept. 5 in "C2," can only mean that his reference is to the left piece.

<sup>3</sup> These are I 607r, 2519, 2582; II 238, 1296.

<sup>4</sup> Of these, five are mentioned only by Wolters (I 345A, 601b; II 195, 439 part and 1345), seven only by Kavvadias (I 1220, 2570a; II 352a, 352d, 589 left, 762, and 1295), and five by both (I 601a right piece; II 325, 1051, 1354, and 1367). In addition, we now have the provenance of I 1920 found by Ross.

<sup>5</sup> According to Wolters (in Graef, I, pp. xviii, xxiii, xxiv), Dörpfeld's photograph (*Ath. Mitt.* 1902, pl. XIII) represents the state of the excavation at this moment.

<sup>6</sup> Wolters (*ibid.*, p. xxiii).

<sup>7</sup> Dörpfeld, *Ath. Mitt.* 1902, p. 408.

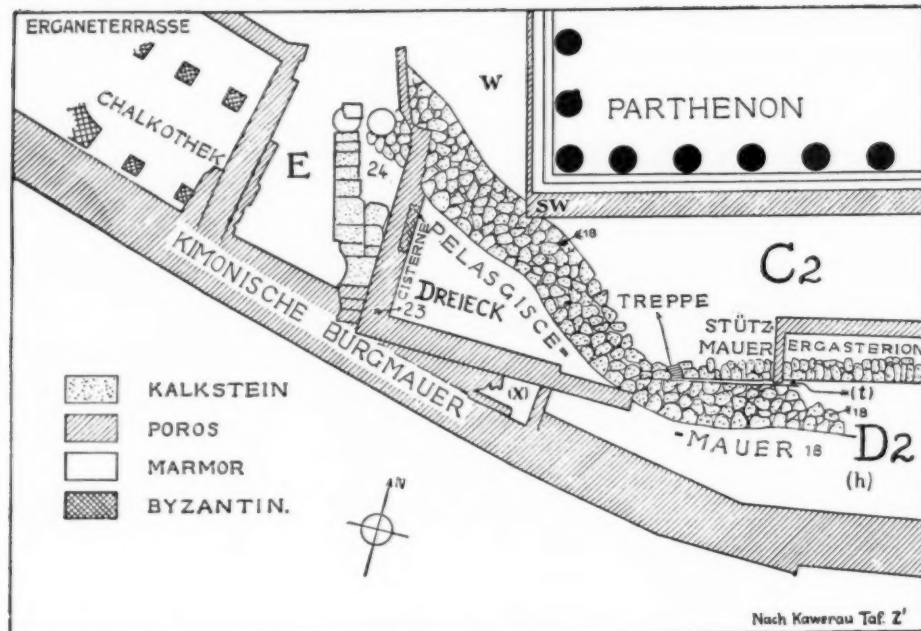


FIG. 6.—PLAN OF EXCAVATED SECTORS SOUTH OF WEST PART OF PARTHENON  
From Graef and Langlotz, *Vasen der Akropolis*, I, p. xxvi=II, p. vii

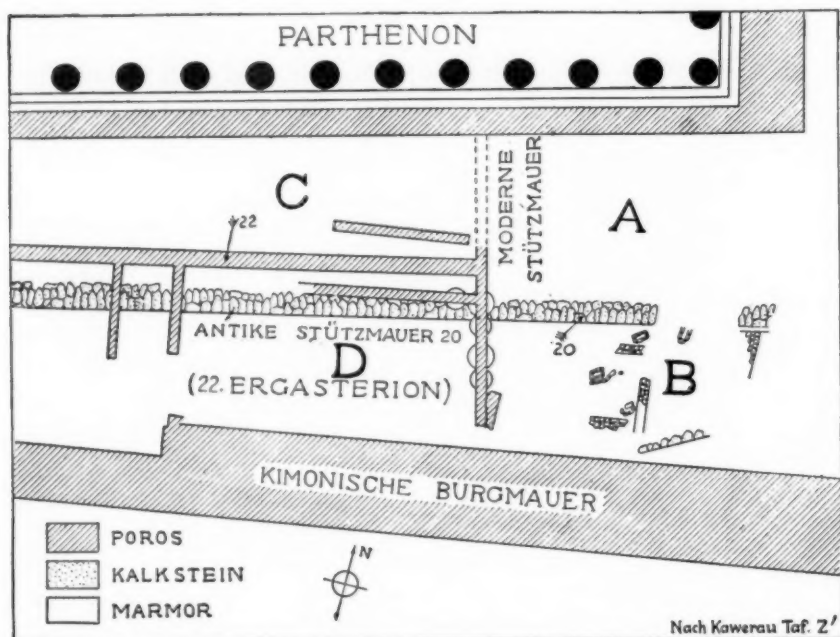


FIG. 7.—PLAN OF EXCAVATED SECTORS SOUTH OF EAST PART OF PARTHENON  
From Graef and Langlotz, *Vasen der Akropolis*, I, p. xviii=II, p. v

value of observations as to the discoveries in the "Perserschutt" has frequently been doubted.<sup>1</sup> But, as Wolters remarks, the observations were in most cases so carefully made that a reconstruction of the stratification is not an impossibility.<sup>2</sup> We must continually bear in mind, however, that the designation "Perserschutt" is by no means to be taken as literal evidence that the find was made in post-Persian débris; the original designation, even when applied under the mistaken impression that the Older Parthenon and its fill were Kimonian, was retained in the final publication on the principle, as Wolters put it, that "one cannot exchange horses while crossing a ford."<sup>3</sup> We have only to remember that the notice "Perserschutt" as applied in 1888 means that the sherd was found in a deposit of débris, and we must depend on other evidence for the decision as to whether the deposit is later or earlier than 480 B.C. To distinguish the earlier débris the term "Tyrannenschutt" was coined by Dickins.<sup>4</sup> The term was an apt one so long as the date 510-506 B.C. was accepted for the deposit;<sup>5</sup> but it becomes less satisfactory if we ascertain that the débris was thrown here twenty-two years after the expulsion of the tyrants.

The lower portion of section "A," approximately the first quarter of the length of the south flank of the Parthenon (from the west edge of Kawerau's pit to the east wall of the Ergasterion), and north of the polygonal retaining wall, was excavated June 4-8.<sup>6</sup> Thirty-seven sherds found in this area were dated and, in twenty-six instances, marked "in débris near Parthenon foundation." Ten others lack this descriptive phrase but clearly belong to this area because of their dates of discovery; these latter are distinguished in the following table by marks of interrogation (?); and seven of them bearing the additional designation of "Perserschutt" (which, as noted above, may equally well mean "Tyrannenschutt") are here marked "P". Observations were begun in stratum IIb (as is shown by the fact that the working level was then twelve courses below that with the projecting ridge and so sixteen courses below the lowest marble step of the Parthenon,<sup>7</sup> that is, two courses above stratum I), and were continued down through stratum I. But in view of the fact that Graef includes in the "Perserschutt" with absolute certainty finds made between June 4 and July 4 with merely the date and *no other notations*,<sup>8</sup> it seems clear that all the thirty-six sherds in question came from strata IIb or IIa, i.e., above stratum I. As for the exception, II 731, which was found "in the lowest stratum above the natural rock" on the very first day, the mere fact that the excavation was conducted by clearing first in each layer a strip along the Parthenon foundation, makes it possible that II 731 was found in the V-shaped trench IIa. And to this, in accordance with our conservative principle of attributing all ambiguous sherds to the upper of the possible strata, we shall assign it:<sup>9</sup>

<sup>1</sup> Cf. Furtwängler, *Aegina*, p. 353; Langlotz, *Zeitbestimmung*, p. 99. <sup>2</sup> Wolters, in Graef, I, p. xx.

<sup>3</sup> *Ibid.*, p. xix.

<sup>4</sup> Dickins, *Acropolis Museum*, I, p. 9.

<sup>5</sup> Heberdey also objects that this name depends on purely subjective interpretation, though, in effect, he agrees with it (*Deut. Literatur-Zeitung*, 1913, p. 171; *Porosskulptur*, pp. 3-4).

<sup>6</sup> Graef and Langlotz give June 4-7; but two fragments are definitely dated June 8.

<sup>7</sup> *Ath. Mitt.* 1902, pl. XIII.

<sup>8</sup> Wolters, in Graef, I, p. xxx.

<sup>9</sup> This list differs from that of Langlotz (II, p. vi) in the omission of I 387a and 838, for which neither date nor provenance are mentioned in the text, and in the addition of the certain fragments I 357b, 360b, 716, 798, 856, 1045a, 1165, 1322, and of the probable fragments I 2516, 2562, and II 1156. It is

	Geometric and Proto-Attic	VI Cent. First Half	Late B.F.	ca. 490
Strata IIb or IIa:				
June 4				II 731
June 5	I 357b, 360a	I 645a	I 615m, 1165, 1295a, 2010, 2028a, 2038, 2192 (?), 2260 P (?), 2271c P (?), 2462 (?)	
June 6	276, 286 360b		798, 811, 856, 1045a, 1669a, 2045, 2047, 2048, 2549 P (?), 2562 P (?), II 1156 P (?)	
June 7		597c, e, 2683 (?)	I 1164, 2046, 2271b P (?), 2516 P (?)	
June 8			716, 1322	

The lower portion of section "B", corresponding to "A" in that it lay east of the Ergasterion, but south of the polygonal retaining wall, was excavated June 11–29.<sup>1</sup> Work was at this time far below the level of stratum V. Nineteen sherds were listed, besides some unspecified Mycenaean and geometric material. The earlier finds, dated June 11–12, were marked "outside inner retaining wall" or "between middle retaining wall and south wall";<sup>2</sup> one piece showed traces of fire (\*). The sherds of June 15–29 were marked "deep";<sup>3</sup> in alternate days they seem to have been taken from the north and south edges of the area, as those of June 15, 18, and 20 were marked "deep between retaining wall and south wall" (once with the additional indication "Perserschutt," "P")<sup>4</sup>, while those of June 16, 19, and 29 were marked "deep near south wall." But all the sherds found on June 15–29 "deep" outside the retaining wall, unless otherwise designated, were clearly in "Perserschutt" according to Graef.<sup>5</sup> Thus eight of the sherds of June 15, 18, 20 must have been in strata IIc or III, while all six sherds of June 16, 19, 29 must have been in stratum IV. As for the exceptions, I 1911 was found on June 15 close to the polygonal wall; "the stratum is older than the beginning of the Parthenon"; this must have been stratum Ib, which was penetrated on that day, as noted by Wolters,<sup>6</sup> while Mycenaean and geometric sherds were in stratum Ia.<sup>7</sup>

conceivable that we might include also II 1252, of which the date 5:VI:1886 suggests a mistake for 5:VI:1888; but this would not alter our conclusions. Fragment I 2260 is wrongly numbered 2960 in the text.

<sup>1</sup> Graef and Langlotz give the dates June 15–25; but the sherds from this section bear the dates June 11–29. <sup>2</sup> In the case of I 2094 the position outside the retaining wall is "not certain."

<sup>3</sup> In the case of I 345B the designation "deep" was omitted; but it was clearly found at a low level together with I 437 and 1371.

<sup>4</sup> Also I 345B was found on June 20, "in Perserschutt with charred remains."

<sup>5</sup> Wolters, in Graef, I, p. xxx.

<sup>6</sup> Wolters, in Graef, I, pp. xix, xxv, with sketch by Kawerau (*ibid.*, fig. 2).

<sup>7</sup> This list differs from those given by Langlotz in the inclusion of I 475, 737, 985, 1371, 2094, 2523, and II 1185.



	Proto-Attic and VII Cent.	VI Cent. First Half	Late B.F.	ca. 500	ca. 470
Strata IIc, III, or IV:					
June 11			I 2094 (?)		
June 12	I 475	I 2523 *	737		
Stratum IV:					
June 16			985, 1275d, II 1185		II 738
June 19				II 214	
June 29			I 1273		
Strata IIc or III:					
June 15			1543, 1944 P, 2511		
June 18			1299, 2567		
June 20	I 345B P, 437 P		1371		
Stratum Ib:					
June 15			1911		
Stratum Ia:					
June 22	I, p. xix (Myc. & geom.)				
June 23	I, p. xix (Myc. & geom.)				

Section "C" occupies the second quarter of the length of the south flank of the Parthenon, from the east wall of the Ergasterion to the middle (ninth) column of the Parthenon. The excavations were conducted here June 26–July 17.<sup>1</sup> Of the twenty-eight sherds listed, I 591a bears merely the date and the notation that it came from section "C"; this and I 593 might have been in stratum V.<sup>2</sup> The finds of July 6 occurred lower, in strata IIb or IIc, fill contemporary with the building of the Parthenon foundation.<sup>3</sup> The next fragments bear the notation that they were

<sup>1</sup> Langlotz gives the dates June 26–July 15, stating that the finds of July 16–17 were made during the refilling operations of the latter half of the month. But the circumstantial accounts of their discovery (I 2582 "in C in black earth," I 2526 "close by Parthenon in black earth") would indicate that they were found during excavation, which was therefore continued until July 17.

<sup>2</sup> Langlotz states that I 591a comes from the "Tyrannenschutt," and I 593 bears the notation "in C in black earth." But Wolters notes that the finds as late as July 3–4 were still in late strata (in Graef, I, p. xxvi), so that stratum V would be a possibility. As noted below, the "Perserschutt" was not certainly reached until July 5, the black earth not until July 7. Langlotz also assigns I 2691 to the "Tyrannenschutt"; but this, an antefix (?) of the third quarter of the VI century, bears merely the date July 3, 1888, and so might equally well have come from section "D". Also ambiguous, in that they might have come either from "C" or from "D", are II 749 (July 3) and I 988 (July 4), both "in uncertain strata." We therefore eliminate I 988, 2691, and II 749 from our table.

<sup>3</sup> Graef says that the finds of July 5–14 in "C", unless specifically stated to be in black earth, were in "Perserschutt"; and of those catalogued only the sherds of July 6 fall into this category. Even here we find ambiguity: I 506 is dated 6: VI: 1888, which must be a mistake for 6: VII: 1888 (so Langlotz, II, p. vi), and is noted merely as coming from "C"; the same is true of I 1994 and 2002, with regard to which Graef surmises that they were found in debris near the Parthenon foundation or in the black earth beneath (the year 1882 given for 1894 is clearly a misprint); and II 45, on which the notation "C" was accidentally omitted (though required by the date of discovery), is specifically stated to have been found in poros strata contemporary with the Parthenon foundation. Langlotz (II, p. vi) is clearly in error in stating that II 45 was found in the black earth. Hence the attribution of the finds of July 6 to the black earth depends on the attribution of I 593 of July 4, which is in itself doubtful. Certainty occurs first on July 7, when I 2481 was found "in C in the black earth under the poros stratum," labelled in such detail as to suggest that it was the first fragment so found.

found "in C, in black earth" (i.e. stratum I), which was excavated July 7-17.<sup>1</sup> Fragments injured by fire are marked with an asterisk (\*). In this area was the second pit excavated by Ziller in 1864; but care was taken to avoid deceptive material from its refilling,<sup>2</sup> and in any case the material in the black earth could not be subject to doubt.<sup>3</sup>

	VI Cent. First Half	ca. 540-520	Late B.F.	ca. 510	ca. 500
Stratum IIc or V:					
June 28	I 591a				
July 4	593				
Strata IIb or IIc:					
July 6	506		I 1994, 2002	II 45	
Stratum Ib:					
July 7		I 2481			
July 9			1069		
July 10			914*, 1767, 1835, 2482, 2519		
July 13	912, 2535		1369, 2137, II 1296		
July 14		607r, 793a*, 1140b	I 1466, 1547, 2224		I 2570b*
July 16			2582	456	
July 17	2526				

Section "D" corresponded to "C" in that it lay opposite the second quarter of the south flank of the Parthenon, east of the central column, but south (outside) of the polygonal retaining wall. Only seven sherds are specifically noted as having come from this region;<sup>4</sup> and only those of Aug. 4-9 were found "deep" and so deserve confidence; but as they lay in "Perserschutt" they probably were in strata IIc, III or IV.<sup>5</sup>

<sup>1</sup> Wolters gives the dates July 6-15; but the dates July 7-17 are derived from the fragments, as noted above.

<sup>2</sup> Wolters, in Graef, I, p. xxv.

<sup>3</sup> This list differs from that given by Langlotz (II, p. vi) in the exclusion of I 2691 (see note 2, p. 427), and the addition of I 607r, 793a, 1069, 1767, 2682, and II 1296 (all, except II 1296, bearing specific allusions to the black earth; and this single doubtful sherd II 1296 is specifically stated by Wolters (*Ath. Mitt.* 1888, p. 228) to have been found in the humus stratum). The omission of the designation "C" on I 2519 and 2526 was clearly accidental, as both were found in the black earth, the latter "close by Parthenon," and the former at a date when "C" was being excavated. Errors in dates occur on I 1767, 2224, and II 456, noted as 10: VI, 14: VI, and 16: VI respectively; since all three were found "in C in black earth," while II 456 bears the additional note "2 m. from Parthenon," it is clear that VI was a mistake for VII (cf. I 506 as discussed above, p. 427, n. 3).

<sup>4</sup> These are not listed by Langlotz. To them we might possibly add I 2255a, found between the middle retaining wall and the south wall on July 12, a date too early for section "D2," and too late for "B." See p. 427, note 2, with regard to I 988, 2691, and II 749, which, if admitted in section "D," would belong to the upper strata.

<sup>5</sup> Thus I 635 and 1773 are both marked "deep"; of the former, Graef notes that it was found just west of the east wall of the Ergasterion, and he states that the latter was in "Perserschutt." This would apply also to I 622a. Graef noted that sherds found "deep" Aug. 4-29 were in "Perserschutt" (I, p. xxx). Of the other sherds listed, I 1057 was found "in uncertain strata," and 1263 "in D in

	Older B.F.	Late B.F.	R.F.
Strata III, IV or V:			
July 3/4		I 1057	
July 5		1149	II 1056
July 7	I 1263		
Strata IIc, III or IV:			
Aug. 4	635	622a	
Aug. 9		1773 P	

As section "C2" we may designate the prolongation of the excavation of "C" along the western half of the south flank of the Parthenon, between Aug. 2 and Sept. 5.<sup>1</sup> This section received no special designation at the time, most of the sixteen sherds listed being noted merely as "inside retaining wall,"<sup>2</sup> and generally with the additional note "opposite Parthenon columns nos. 2-8 (or 3-7, or 3-4) from west."<sup>3</sup> Little is stated in regard to the strata in which these were found: for most (i.e., I 1260, 1734; II 96, 99, 114, 238, 551) only the position in plan is given; others (I 607, 914, 1784) are mentioned as occurring in the fill near the Parthenon foundation (to I 914 is added "in uncertain stratum"), and two (I 2560, 2592) even lack the provenance; all these might therefore have been in strata IIb or IIc. Wolters states that not until Aug. 28 was the "Kimonian" stratum (II) reached,<sup>4</sup> and Graef adds that sherds found on Aug. 30 and afterwards were certainly in "Perserschutt."<sup>5</sup> But I 601a and 612 were found "close above rock," which Graef rightly interprets as in accumulation older than the "Perserschutt."<sup>6</sup>

	Ca. 540-530	Late B.F.	ca. 510	ca. 500
Stratum V:				
Aug. 3	I 2119c			
Strata IIb or IIc:				
Aug. 29	607	I 914		
Aug. 30			II 99	I 2592 P
Aug. 31		1260, 1734, 1784	96, 114, 551a	II 238
Sept. 1			I 2560 P	I 2515
Stratum Ib or IIa:				
Sept. 3	612			
Sept. 5	601a			

the late cistern," so that neither would seem to be of stratigraphical value. This would apply also to I 1149 and II 1056, which were found at the same time.

<sup>1</sup> This list differs from that given by Langlotz (II, pp. vi-vii) in the addition of I 607, 914, 1784, 2560, and II 551a. In his list, II 2515 is a misprint for I 2515.

<sup>2</sup> In the case of II 238 the word "unterhalb" is probably a misprint for "innerhalb" with reference to the retaining wall.

<sup>3</sup> For I 2592 we have only the date Aug. 30 "in Perserschutt," whence Langlotz rightly concludes that it was found in the section here known as "C2," and includes it in his list; no other section was being excavated at this moment. Likewise I 2560 has only the date and the notation "Perserschutt"; but in this case the provenance is supplied by the reports of Wolters and Kavvadias (see pp. 422, 423).

<sup>4</sup> Wolters, in Graef, I, p. xxvi.

<sup>5</sup> *Ibid.*, I, p. xxx.

<sup>6</sup> Graef infers also that I 2515 was found in a stratum older than the "Perserschutt," but the grounds for this assumption are not evident and the sherd cannot be used for dating stratum Ib.

The section corresponding to "C2," outside the polygonal retaining wall and opposite the west half of the south flank of the Parthenon, though likewise originally without designation, may here be known as "D2." This area was excavated immediately after "C2," from Sept. 3 to Oct. 27. Of the twenty sherds listed, the first (Sept. 5-15) were marked "outside retaining wall,"<sup>1</sup> sometimes with the additional phrase "before SW. corner of Parthenon" (I 681b; II 305), or "before Parthenon column no. 4 (or 5-6 or 5-11) from west" (II 268, 344, 355, 1019), or "near (polygonal wall) steps" (I 2090b). To this same section outside the polygonal retaining wall belong fragments marked "t" ("deep");<sup>2</sup> only one sherd (I 837) seems to have been so marked, on Sept. 27; and Graef adds that it was found at the level of the "Perserschutt." Here, too, we must include a series marked "h," found between the Pelasgian wall and the south wall on Oct. 2-27, and therefore at low levels. Of these, I 613 and 717 are said to have been found in uncertain strata, II 1116 deep in the "Perserschutt," and I 1691 "deep"; the last, though Graef concludes that it must be in a stratum earlier than the polygonal retaining wall, may also have been in "Perserschutt" like the Dipylon fragments found on the same day.<sup>3</sup> We can only conclude that the sherds of Sept. 27-Oct. 27 must have been in strata IIc, III or IV, while those found before Sept. 27 might have been in stratum V.<sup>4</sup>

	Geometric and VII Cent.	Middle VI Cent.	Late B.F.	500/490	490/480	480/470	470/460
Strata IV or V:							
Sept. 5					II 344		
Sept. 6	I 2073				777 (?)		
Sept. 11			I 681b	II 305 P			II 1019
Sept. 13		I 2090b P		268		II 355	
Sept. 15			2496				
Strata IIc, III or IV:							
Sept. 27			837				
Oct. 2		1432					
Oct. 4		613					
Oct. 6				305 P			
Oct. 17	I, p. 23						
Oct. 18			717				
Oct. 19	I 290		717				
Oct. 20	I, p. 23						
Oct. 22						638	
Oct. 25			II 1116 P (?)				
Oct. 27	I, p. 23 (P)		I 1691				

The "triangle" composed by the Pelasgian wall (1) and the two arms of the poros retaining wall (3) was excavated Sept. 18-Oct. 6, 1888. The sherds, necessarily belonging to stratum III, were in many cases marked merely with the date (other

<sup>1</sup> To I 2073 is added, "not certain."

<sup>2</sup> Graef, I, p. xxvii, note 2.

<sup>3</sup> Graef, I, p. 23. Graef's general statement (p. xxx) that fragments found in "h" after Oct. 9 must be older than the polygonal wall, and so in stratum I, conflicts with his detailed statements of provenance and particularly with the presence of the late piece II 638.

<sup>4</sup> These are not listed by Langlotz.

areas excavated at this same period having special designations);<sup>1</sup> but some were specially marked "Dreieck"; some were also noted as found in "Perserschutt" (here marked "P"). Some sherds were found on Sept. 11-12 at a level just above that which later revealed the triangle, and so apparently in stratum V. A few sherds dated after Oct. 6 are of uncertain origin; but it happens that they include solely fragments of vases found in stratum III. Fragments injured by fire are marked with an asterisk. On account of the possibility of doubt, the forty-five certain "Dreieck" pieces are here listed first:<sup>2</sup>

	560-540	Late B.F.	ca. 510	ca. 500	ca. 490	ca. 480	ca. 470
Stratum V:							
Sept. 11						II 564	
Sept. 12			I 2336 P				
Stratum III:							
Sept. 19	I 912 P					815 P, 897, 925	
Sept. 21	2211c			II 461c P	II 758*		
Sept. 22				883	910*	641*, 778*, 925	
Sept. 24						641*, 704 P, II 761 P 969	
Sept. 25					295, 730*, 758*	641*, 947*	
Sept. 27						815 P	
Sept. 28					295		
Oct. 1					623*, 730*, 758*, 898*		
Oct. 2		I 2511					
Oct. 3	773b P	1884 P*		800			761
Oct. 4	2203b						
Oct. 6					758*		
Oct. 9					758*		
Oct. 10					758*		
Oct. 11					758*	641*	
Oct. 12						641*, 815 P	
Oct. 17				461c P	758*		
Oct. 27						897	

Many of the sherds found in the triangle were not so specified, however, being marked merely with the date, as contrasted with those found on the same dates in other areas and distinguished by special designations. This rather dangerous method of procedure leaves a slight amount of doubt with regard to the authenticity of the evidence offered by these fragments, so that they are here grouped in a separate list, which includes forty-eight sherds dated Sept. 18 to Oct. 6, 1888, but without provenance:<sup>3</sup>

<sup>1</sup> Graef, I, pp. xxvii, note 2, xxx.

<sup>2</sup> This list differs from that of Langlotz in the omission of I 967a, 2256, 2391b, 2434, 2455, 2489, and II 62, 227, 608, 683, 736, 813, 831 and 978, which lack the provenance and so are included in the following list. We also omit II 81c and 987, which were found west of the Parthenon and are included in the Langlotz list by error. We add, however, I 912, and II 461c, 564, 730, and 947, all found in the triangle.

<sup>3</sup> This list includes I 967a, 2256, 2391b, 2434, 2455, 2489, and II 62, 227, 608, 683, 736, 813, 831, and 978 of the Langlotz list, as well as twenty-four others which were found between Sept. 18 and Oct. 6.



	560-540	Late B.F.	ca. 510	ca. 500	ca. 490	ca. 480	ca. 470
Stratum III:							
Sept. 18				II 227 P?			
Sept. 19					II 813		
Sept. 20		I 1236b P, 1845 P					
Sept. 21	I 645c P	669 P, 1066a P, 2208 P	I 967a P				
Sept. 24		662 P, 2256 P	967c P		608, 813	II 22*, 978*	II 626, 831
Sept. 25		742d P, 980a, b, c		I 2434	813	22*	626
Sept. 27	2391b	665a P, 2489	967a P			977*	625
Sept. 28		2356 P			736*		
Oct. 1				2278 P	683		
Oct. 2			II 7*				
Oct. 3		2124 P					
Oct. 4		662 P, 2255c P, 2455					448
Oct. 5	432 P	723 P			350		
Oct. 6		2455	II 62		813		

We now turn to the second part of our investigation, a discussion of the contents of the successive strata.<sup>1</sup> And, in order to obtain a clearer idea of the relationship of sherds to strata, we may begin with the latest,<sup>2</sup> which at the same time provides a definite chronological basis, that of the Kimonian south wall. For the lower part of this wall (4), antedating the Periclean addition (5), dates from the period immediately after the battle of the Eurymedon about 469 B.C. (Plutarch, *Kimón*, 13, 6; *Kimón and Lucullus*, 1, 5; *Glor. Ath.* 7; Nepos, *Cimón*, 2, 5; Pausanias, I, 28, 3).<sup>3</sup> Consequently the fill (IV) behind this lower part of the south wall should contain material ranging down to about 469 B.C., but no later.

Of the<sup>4</sup> fragments recorded as found before June 4, along the south wall of the

<sup>1</sup> It will be noted that certain fragments tabulated as found in different locations belong to the same vases. This is true of I 607, 645, 912, 914, and 2511. In the last case there is no difficulty; pieces found in section "B" (June 15) and the triangle (Oct. 2) could both belong to stratum III. But pieces of I 607 and 914 were found in stratum Ib ("C", July 14 and 10), others in IIb or IIc ("C2", Aug. 29); similarly a piece of I 912 was found in stratum Ib ("C", July 13) and another in III (triangle, Sept. 19); and one piece of I 645 was found in stratum IIa or IIb ("A", June 5), another in III (triangle, Sept. 21). In these four instances it is now impossible to decide whether the provenance should be doubted, or whether some old débris was actually employed in filling the upper strata. We are not confronted by these problems, however, since none of the sherds in question is important for dating purposes.

<sup>2</sup> Literally, the latest would be the Periclean wall (5) and stratum V; but so much of the latter had been removed before 1888 that we cannot now secure adequate evidence.

<sup>3</sup> The exact date of the battle of the Eurymedon is uncertain. Diodorus (XI, 60) gives 470/69 B.C., and is followed by Beloch (*Gr. Gesch.*,<sup>2</sup> II 1, p. 67, II 2, p. 185); Busolt (*Gr. Gesch.*,<sup>2</sup> III 1, p. 143 with note 2) made out a strong case for 468; Perrin (*Plutarch's Cimon and Pericles*, pp. 8, 191-192) gives 467; Walker (*Cambridge Ancient History*, V, p. 53, table I) prefers 467 or 466; Judeich (*Topographie*,<sup>2</sup> pp. 74, 209) accepts 465 B.C. I have adopted Wade-Gery's preference for 469 B.C. for the reasons cited by him (*J.H.S.* 1933, p. 81 and n. 87), agreeing with Diodorus.

Acropolis, those of January were gathered from above the poros stratum southeast of the Parthenon, and also from the fill behind the south wall, without proper segregation; some must have been in Periclean deposit (V), such as II 1051 of about 450 B.C., and others in the upper strata mixed with marble chips.<sup>1</sup> Those listed in February, March, and May, however, were found in the fill behind the south wall (those of March and May being specified as south of the retaining wall); but again we cannot be certain as to the levels. The latest pieces were the following:<sup>2</sup>

- I 2570a (pl. 107), X 76a; edge of black-figured pinax dedicated by ---- des (Lolling's restoration Andokides is purely hypothetical); "first decade of fifth century" (Graef).  
 II 325 (pl. 20-22), B 76; kylix of Makron, of Glaukon period, about 480 or 480-470 (Langlotz; Beazley, *Att. Vasenmaler*, p. 212, no. 10).  
 II 439 (pl. 35-36), C 16; white-ground kylix of Euphronios, by the Pistoxenos painter, with kalos name Glaukon, about 480-470 (Langlotz; Beazley, *Att. Vasenmaler*, p. 260, no. 5).  
 II 762 (pl. 62), G 389; volute krater of Oreibelos, by the painter of the Deepdene amphora, about 470 (Langlotz; Beazley, *Att. Vasenmaler*, p. 295, no. 19).  
 II 1295, N 14; edge of column krater with name of Sostratos (the same name on II 1294 dated end of sixth century by Langlotz).  
 II 1354 (pl. 93), N 104; lamp dedicated to Athena, about 500 (Langlotz).  
 II 1367 (pl. 91), F 97; fragment by Kallis, dedicated to Athena Hygieia, about 470 (Langlotz).

If we could assume that these were all in the lower stratum (IV), they would be in perfect conformity with the date of the south wall, since the latest pieces (II 325, 439, 762, 1367) descend only to about 470 B.C. But the upper stratum (V) would be equally plausible and equally satisfactory as to date. In any case, it would seem that II 325, which Graef believed to have come from "Perserschutt,"<sup>3</sup> was in stratum IV.

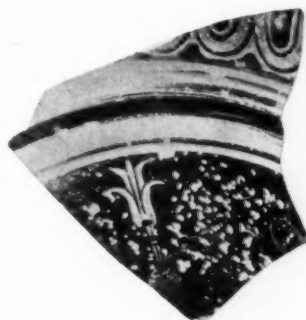
The sherds definitely known to have come from stratum IV, inventoried after June 4, range from Dipylon ware (in "D2") to about 470 B.C. The latest, selected from those found by Ross in stratum IV (or III), and those tabulated for sections "B," "D," and "D2," are the following:<sup>4</sup>

<sup>1</sup> Wolters, *Ath. Mitt.* 1887, p. 388.

<sup>2</sup> The numbers of the sherds are those of the final publication, to which are added the provisional numbers (X 76a, B 76, etc.) as used by Beazley and others.

<sup>3</sup> Graef, *Jb. Arch.* I. 1891, p. 43.

<sup>4</sup> The late sherds of section "B" were definitely found in stratum IV. The only late piece in "D"



II 638



II 758

FIG. 8.—LATEST SHERDS FROM STRATUM IV, BARELY ANTEDATING 469 B.C.  
 From Graef and Langlotz, *Vasen der Akropolis*, II, pl. 20-22, 52, 62

- II 20 (pl. 1), B 14; plate by "the Brygos master in his middle period" (Langlotz; Beazley, *Att. Vasenmaler*, p. 182, no. 85), and so about 490-480 B.C.  
 II 214 (pl. 12), A 38; kylix of the "Panaitios period, about 500" (Langlotz).  
 II 638 (pl. 52), H 12; loutrophoros fragment of about 480 (Langlotz).  
 II 738 (pl. 62), G 33; bell krater, not dated, but those in its vicinity (e.g., 732, 734, 737, 739, 740, 742) assigned by Langlotz to about 470 B.C.  
 Unidentified owl skyphos; about 490 B.C. (?)

Thus, while we have comparatively little recorded material from this fill, such evidence as it yields is in conformity with the date of the wall which supported it. It was the débris of 480 B.C., the true "Perserschutt," with a few accretions of the next decade. The latest sherds (II 638 and 738) were painted only a few years before the Kimonian wall was constructed and the fill (IV) thrown in behind it.

We turn next to the poros retaining wall (3) and to its fill (III), which Dörpfeld had assigned to the period immediately after the battle of Marathon. The contents of the strata behind the eastern portion of this wall, opposite the southeast corner of the Parthenon, can no longer be distinguished. But at the southwest corner of the Parthenon the elbow of poros retaining wall composed, with the Pelasgian wall as the hypotenuse, a right triangle of which the contents were very carefully segregated. It will be noted from the preceding tabulation (p. 431) that this fill was of uniform character from top to bottom.<sup>1</sup> For our purpose we need to consider only the sherds which have a bearing upon Dörpfeld's date of the wall, namely, those of 490 B.C. or later.

At least six vases (II 295, 623, 730, 758, 898, and 910), and probably also five others (II 350, 608, 683, 736, and 813), found within this fill, are definitely assigned to about 490 B.C.:

- II 295 (pl. 15), B 69; kylix "of the first decade of the V century by a painter closely related to the Brygos painter" (Langlotz).  
 II 350 (pl. 23), B 117; kylix of about 490-480 (Langlotz).  
 II 608 (pl. 45), G 362; amphora of 490 (Langlotz, p. vii).  
 II 623 (pl. 48), G 223; amphora, "early work of the Tyskiewicz painter" (Langlotz; Beazley, *Att. Vasenmaler*, p. 116, no. 38), of 490 (Langlotz, p. vii).  
 II 683, G 334; hydria, placed by Langlotz between 681 (ca. 500) and 684 (ca. 480).  
 II 730 (pl. 58), G 11; kalyx krater of the "Kleophrades painter, ca. 490" (Langlotz; Beazley, *Att. Vasenmaler*, p. 72, no. 29).  
 II 736 (pl. 58), G 36; kalyx krater of 490 (Langlotz, p. vii).  
 II 758 (pl. 63), G 25; volute krater of the "Syriskos painter, ca. 490" (Langlotz; Beazley, *Att. Vasenmaler*, p. 158, no. 3).  
 II 813 (pl. 73), G 342; column krater of 490 (Langlotz, p. vii).  
 II 898 (pl. 77), G 224; fragment of uncertain form, by the "Kleophrades painter" (Langlotz; Beazley, *Att. Vasenmaler*, p. 75, no. 58), of 490 (Langlotz, p. vii).  
 II 910, G 337; fragment of uncertain form, by the "Eucharides painter" (Langlotz; Beazley, *Att. Vasenmaler*, p. 96, no. 33).

(II 1056) was at so high a level that it might have been in stratum V, and so is here omitted. And in section "D2" we confine our observations to the material found on or after Sept. 27 (see p. 430), yielding only one late sherd.

<sup>1</sup> Cf. Wolters, in Graef, I, p. xxvii.

Even if we had not other evidence than these, therefore, it would be hardly possible to date the fill immediately after the battle of Marathon; for it would be almost impossible to imagine that as many as eleven notable vases would have been broken up and buried immediately after their manufacture.

In addition to these, furthermore, we have at least eight vases (II 641, 704, 778, 815, 897, 925, 947, and 969), and probably also three others (II 22, 977, 978), found within this fill and nevertheless definitely assigned to about 480 B.C.:

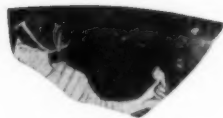
- II 22 (pl. 2), B 18, plate by a "backward painter of the years about 480" (Langlotz).
- II 641 (pl. 51), G 371; loutrophoros with "drawing of about 480" (Langlotz).
- II 704 (pl. 54) F 90; oinochoe (?) of 480 (Langlotz, p. vii), with details characteristic of 480-470 (Langlotz).
- II 778 (pl. 68), G 194; stamnos by the "Syleus painter, about 480-470" (Langlotz; Beazley, *Att. Vasenmaler*, p. 162, no. 28).
- II 815 (pl. 74), G 122; column krater by the "Harrow painter" (Langlotz; Beazley, *Att. Vasenmaler*, p. 471, no. 55), of 480 (Langlotz, p. vii).
- II 897 (pl. 77), G 140; fragment of uncertain form, of 480 (Langlotz, p. vii).
- II 925 (pl. 76), G 274; fragment of uncertain form, undated, but those in its vicinity (e.g., 911, 936, 941, 949, 954) assigned by Langlotz to about 480 B.C.
- II 947 (pl. 79), G 278; fragment of uncertain form, cf. 925.
- II 969, G 18; fragment of uncertain form, about 480 (Langlotz).
- II 977 (pl. 83), G 336; fragment of uncertain form, undated, but those in its vicinity (e.g., 972, 974) assigned by Langlotz to about 470 B.C., but, like 974, probably to be placed before 480 because of traces of fire.
- II 978, G 361; fragment of uncertain form, cf. 977.

These eleven vases, at the earliest, could not have been broken up until the Persian devastation of the Acropolis in 480 B.C.; and their evidence is sufficient to prove that we are dealing with a "post-Persian" wall.

But the sherds tell us even more. For we have remains of at least one vase (II 761), and probably also of four others (II 448, 625, 626, 831), which were found in the fill and nevertheless belong to about 470 B.C.

- II 448 (pl. 33), C 25; white ground kylix, placed at end of series by Langlotz.
- II 625 (pl. 48), G 79; amphora of the "Harrow painter, about 470" (Langlotz; Beazley, *Att. Vasenmaler*, p. 120, no. 45).
- II 626 (pl. 49), G 170; amphora, not dated, but those in its vicinity (e.g., 625, 627, 628) assigned by Langlotz to about 470 B.C.
- II 761 (pl. 66), G 114; volute krater by the "Copenhagen painter about 460" (Langlotz; Beazley, *Att. Vasenmaler*, p. 156, No. 5). But this date seems rather late for the Copenhagen painter, whom Beazley (*Attic Red-Figured Vases in American Museums*, p. 63) associates with the Syriskos painter and the Syleus painter; and Miss Swindler (*Ancient Painting*, p. 192) likewise places the Copenhagen painter in the decades 490-470; therefore we may prefer 470 (or earlier) rather than 460 B.C.
- II 831, G 63; column krater, not dated, but the preceding example (830) dated by Langlotz about 470 B.C.

It is noteworthy that the fill within the triangle contains almost the same ingredients as that immediately behind the south wall: considering only the material of 490 B.C. or later, we have 41% (11 vases) of about 490, and 41% (11 vases) of about 480, and 18% (5 vases) of about 470 B.C., showing a gradual reduction toward the terminal date, as is to be expected. It will be noted, furthermore, that traces



II 448



II 626a



II 625



II 761

FIG. 9.—LATEST SHERDS FROM STRATUM III, BARELY ANTEDATING 469 B.C.  
From Graef and Langlotz, *Vasen der Akropolis*, II, pl. 33, 48, 49, 66



of fire were observed on very many of the sherds from stratum III in the triangle (I 1884; II 7, 22, 623, 641, 730, 736, 758, 778, 898, 910, 947, 977, 978), clear evidence that we are here concerned with débris of the Persian conflagration of 480 B.C.<sup>1</sup> Again we are dealing with the true "Perserschutt," with some additional débris of the next decade. In other words, the potsherds agree with the architectural evidence in determining the date of the elbow of the poros retaining wall (3) as immediately after 470 B.C.; it is neither pre-Persian (Dörpfeld) nor Periclean (Heberdey), but dates from the period midway between, that of Kimon, coëval with the great south wall.<sup>2</sup>

As for the fill contemporary with the erection of the Parthenon foundation, strata IIa, IIb, and IIc, there now seems to be no way of distinguishing their contents. In section "A," as we have seen, all the sherds must have come from strata IIa or IIb (with the possible exception of II 731 which is here included for conservative reasons, the only alternative being the older stratum Ib).<sup>3</sup> In section "C" there is less ambiguity, since the sherds can easily be distinguished from those found in stratum Ib "in the black earth." Thus we may conclude that all sherds found on July 6 in section "C" lay in the upper strata IIb or IIc.<sup>4</sup> As for section "C2," where the records were not very carefully kept, we may assume that all sherds listed for Aug. 29–Sept. 1 were in the upper strata IIb or IIc, as contrasted with those found "close above rock" on Sept. 3–5 and so presumably in the black earth.<sup>5</sup>

The sherds listed as coming from the strata IIa–c contemporary with the Parthenon foundation, as excavated in these three sections, are of all styles from the geometric to the red-figured. For our purposes, we are concerned only with those of the end of the sixth century and later, that is, in the period during which Dörpfeld assumed that the foundation was in course of erection. In this connection it would be desirable to make a more careful analysis of the later black-figured sherds (I 615m, 716, 798, 811, 856, 914, 1045a, 1164, 1165, 1260, 1295a, 1322, 1669a, 1734, 1784, 1994, 2002, 2010, 2028a, 2038, 2045–2048, 2192, 2260, 2271b–c, 2462, 2515, 2516, 2549, 2560, 2562, 2592, and II 1156) than I am capable of producing. We may, however, select the following significant pieces:

I 2515 (pl. 103), X 16; natural clay ground pinax, 500 (Langlotz, p. vii).

I 2560 (pl. 107), X 75; natural clay ground pinax, the drawing of the head recalls Oltos (Graef) and so of about 510 B.C.

I 2562 (pl. 106), X 47; natural clay ground pinax of "end of the VI century" (Graef).

I 2592 (pl. 111), X 100; white ground pinax "probably of beginning of the V century" (Graef).

The dates of the red-figured sherds are more easily defined, as follows:

II 45 (pl. 3), A 182; kylix of Oltos "of the time about 510" (Langlotz, p. vi; Beazley, *Att. Vasenmaler*, p. 17, no. 77).

II 96 (pl. 7), A 53; kylix of the school of Epiktetos, 510 (Langlotz).

<sup>1</sup> The same conclusion may be drawn from the fact that calcined terracotta simas identical with those found in the triangle (Graef, in Wiegand, *Porosarchitektur*, p. 112) were also found by Ross in stratum IV (Ross, *Arch. Aufs.* I, pp. 105–106, 109–110, 139; Buschor, *Tondächer der Akropolis, Simen*, p. 24).

<sup>2</sup> Langlotz, with this same material, reached the conclusion that "the triangle was not filled up with débris until after the departure of the Persians, and perhaps the wall (3) was not built until then" (II, pp. vii–viii).

<sup>3</sup> See p. 425.

<sup>4</sup> See p. 427.

<sup>5</sup> See p. 429.

- II 99, A 95; kylix of the school of Epiktetos, "about 510" (Langlotz).  
 II 114 (pl. 7), A 99; kylix of the school of Epiktetos, Leagros period, 510 (Langlotz).  
 II 298, B 18; kylix of the "Panaitios period, about 500" (Langlotz), with an inscription of Smikros dedicating it to Athena, possibly the painter Smikros (for whom see Beazley, *Att. Vasenmaler*, p. 62).  
 II 551 (pl. 41 and text fig.), F 6; kantharos of the "Kerberos painter, about 510" (Langlotz; Beazley, *Att. Vasenmaler*, p. 30, no. 8).  
 II 731 (pl. 58), G 31; kalyx krater, "about 490" (Langlotz), "not painted before 500" (Langlotz, p. vi).



FIG. 10.—LATEST SHERDS FROM STRATUM II, BARELY ANTEDATING 490 B.C.  
 From Graef and Langlotz, *Vasen der Akropolis*, I, pl. 103, 111; II, pl. 58

Among these easily datable sherds of the three last decades (and thorough analysis of the late black-figured pieces would undoubtedly add others), therefore, we obtain the following proportions: 65% (5 vases and 2 pinakes) of about 510, and 26% (1 vase and 2 pinakes) of about 500, and 9% (1 vase) of about 490 B.C. This gradual diminution in the numbers of sherds from each decade, terminating abruptly with 490 B.C., is parallel to the similar diminution toward 470 B.C. among the sherds found near the Kimonian walls, and in the same way forms an indication that we are approaching the date of the foundation. We are obviously dealing, not with the true "Perserschutt," but with the so-called "Tyrannenschutt,"<sup>1</sup> of which the date, however, must be two decades later than has generally been assumed. It would be difficult to imagine that as many as seven important pieces

<sup>1</sup> The significant fact that none of the sherds from strata IIa-c has traces of fire (an absence which agrees with that noted for the poros fragments: Dörpfeld, *Ath. Mitt.* 1902, p. 408; Heberdey, *Poros-skulptur*, p. 6) is cited merely as a contrast to stratum III.

manufactured about 510 B.C. had been broken up and buried four or five years later; but when we add to these the testimony of the four pieces of 500-490 it becomes increasingly clear that the fill could not have been deposited as early as 506 B.C. or immediately thereafter. If we assume for the latest vase (II 731) a date midway between the two offered by Langlotz, about 495 B.C., it would be reasonable to assume that this single example had been accidentally broken within seven or eight years and was used as part of the fill in the V-shaped trench (stratum IIa). In other words, II 731, found in the earliest layer of fill contemporary with the foundation, directly above rock,<sup>1</sup> gives us the date *post quem* for the beginning of the Parthenon foundation as about 495 B.C. or rather a few years later.<sup>2</sup>

Lastly, we turn to stratum Ib, the upper half of the black earth or humus which covered this part of the Acropolis to a depth of about 2 m. before the time of the erection of the Parthenon foundation. Unfortunately, in the first section observed ("A"), we cannot be certain that the only sherd known to have come from a low level belonged to this stratum.<sup>3</sup> In section "B," I 1911 must have come from this stratum. In the case of section "C" the sherds found in "the black earth," as stratum I was then designated, were carefully noted; all of the twenty-two sherds (with one exception, II 1296) listed on July 7-17 bear such notes; and the single exception is authenticated by other sources.<sup>4</sup> Of these sherds, one is red-figured (II 456), found "in C in the black earth about 2 m. from the Parthenon."<sup>5</sup> In the case of section "C2" the observations were not very careful; only the two sherds listed on Sept. 3-5 were noted as having been found "close above rock" and so presumably in stratum I; but these are not red-figured.

Thus the records show that at least one red-figured sherd was found in stratum I. This agrees with the statements of Kavvadias, Wolters, Graef, and Dörpfeld that some red-figured sherds were found in this humus stratum,<sup>6</sup>—a statement which Dörpfeld embodied in the following significant sentence: "All objects which it contains, including some red-figured sherds, must be older than the temple." In itself this fact would not disagree with Dörpfeld's date of 506 B.C. for the beginning of the temple, since the beginning of the red-figured style has been pushed back to 530 B.C. But closer examination of the recorded sherd betrays a discrepancy:

II 456 (pl. 38), E 12; skyphos, "fine drawing by the Euergides painter (?), about 510" (Langlotz).

It might seem rash to attach too much importance to a single red-figured sherd. But it will be noted that the black-figured sherds from the same context are in complete agreement. Some of these, to be sure, are fairly early (I 601, 607, 612, 793,

<sup>1</sup> If, indeed, it was not already imbedded in the earlier stratum I (see p. 425).

<sup>2</sup> With the same material Langlotz concludes that this fill "is chiefly of sherds earlier than 500" and consequently that the foundation dates from about 500 (II, p. vii).

<sup>3</sup> See p. 425, note 2, concerning II 731.

<sup>4</sup> See p. 428, n. 3.

<sup>5</sup> See p. 427, note 3, for the exclusion of I 593, 1994, 2002, and II 45 from stratum I.

<sup>6</sup> Kavvadias, *Δελτ.* 'Αρχ. 1888, p. 44; Kavvadias and Kawerau, *Ausgrabung*, p. 38; Wolters, *Ath. Mitt.* 1888, p. 228, and Graef, I, pp. xviii-xix, xxvi; Dörpfeld, *Ath. Mitt.* 1902, pp. 386, 411. At least one of these sherds had been found before June 4 (Wolters, in Graef, I, pp. xviii-xix), possibly that mentioned by Kavvadias.

912, 1140, 2481, 2526, 2535). Others, however, are late black-figured (I 914, 1069, 1369, 1466, 1547, 1767, 1835, 1911, 2137, 2224, 2482, 2519, 2570b, 2582, and II 1296): and it might be possible that a detailed analysis would yield some information of significance. At present, I can cite only some fragments of votive tablets, for which the black-figured technique was retained down to the beginning of the fifth century.

I 2570b (pl. 107), X 76b; natural clay ground pinax of the "first decade of the V century" (Graef).

Graef suggests that this joined a piece (I 2570a) mentioned above; but the border has a different pattern so that the junction is uncertain.

I 2582 (pl. 109), X 89; white ground pinax of the "end of the VI century" (Graef).

Thus, in the case of I 2570b, at least, we apparently have a fragment which was not even painted until after the date to which Dörpfeld assigns the erection of the foundation; and yet the fragment lay in the gradual and natural accumulation of soil which antedated that foundation. Again, II 456 was painted at about 510 B.C.; it is most improbable that it would have been broken up and buried within four or five years of its execution, and this improbability becomes an impossibility when we combine it with the testimony of I 2570b. Finally, when we remember that the superposed stratum II has been shown to be as late as 490 B.C., it becomes

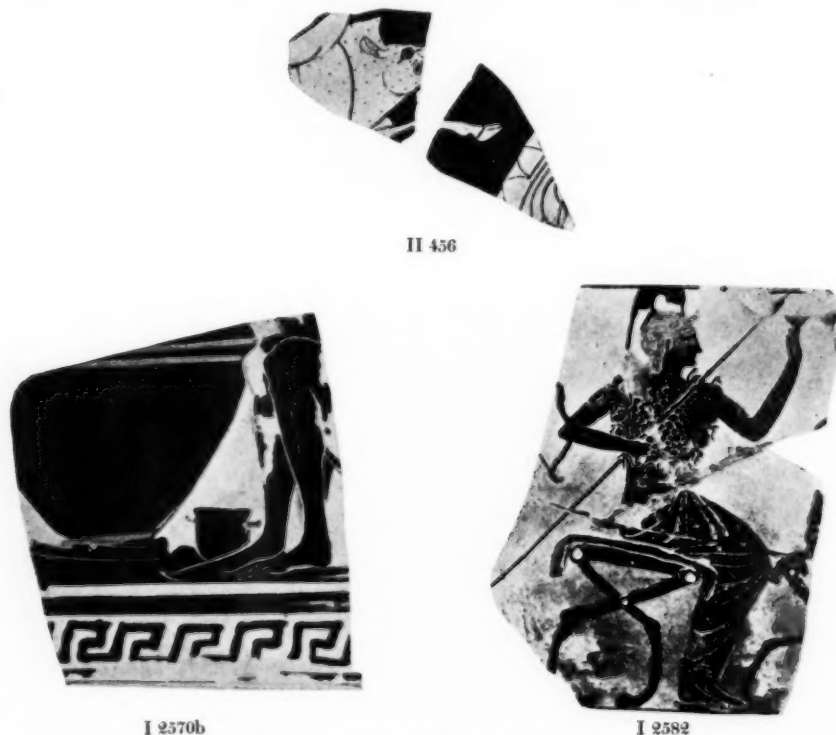


FIG. 11.—LATEST SHERDS FROM STRATUM I, BARELY ANTEDATING 490 B.C.  
From Graef and Langlotz, *Vasen der Akropolis*, I, 107, 109; II, pl. 38

apparent that the underlying stratum I must have formed the exposed surface of the Acropolis as late as 490 B.C., and that at this date the Older Parthenon had not yet been commenced.<sup>1</sup>

Thus the stratigraphical evidence agrees with that of the architecture in demanding a post-Marathonian date for the very beginning of work on the basement of the Older Parthenon. In other words, it compels us to abandon theories C, D, F, and G. Of the survivors, E has already been eliminated on architectural grounds. We are left, consequently, with theory H as the sole possibility, a single Older Parthenon, of marble, planned after 490 B.C.

### 3. ASTRONOMICAL EVIDENCE

In view of our acquired knowledge that not only the marble peristyle, but likewise its great foundation, must be assigned to the decade 490–480 B.C., and presumably to the early part thereof, we may seek greater precision by drawing upon a third source of information. I refer to the orientation of the temple. This is an aspect of the problem which may be approached with a certain amount of diffidence, particularly in view of the fact that similar methods had yielded to Burnouf the date 554 B.C. and to Penrose 1150 or 1495 B.C.<sup>2</sup> Now, however, with the restriction of a single decade, such fantastic calculations may be eliminated, and we may ascertain whether it is possible to obtain a result more in accordance with the architectural and stratigraphical requirements.

The orientation of the Parthenon, and of the basement on which it stands, was obtained most accurately by Penrose, carefully checked astronomical observations giving  $12^{\circ} 53'$  north of true east.<sup>3</sup> The axis, prolonged at this angle, would pass the crest of Mt. Hymettus at a distance of 9075 m. and a height of about 610 m. above sea level, about 450 m. above the Parthenon basement,<sup>4</sup> the angle rising to the visible horizon then being  $2^{\circ} 50'$ . But the sun "can be reckoned upon to throw a strong illumination as soon as a quarter of his refracted orb is above the visible horizon," which "allows the reduction of the apparent height of the mountain by  $0^{\circ} 22'$ ."<sup>5</sup> Thus we may estimate the angle to the horizon as about  $2^{\circ} 25'$ .<sup>6</sup> At

<sup>1</sup> It is to be noted that a few of the fragments found in the black earth show traces of fire (I 793a, 914, 2570b), which could hardly have been, in this stratum I, connected with the Persian conflagration. It is probable that they were injured in some earlier accidental fire, a form of destruction to which the early temples were constantly exposed. As Wolters observes, the traces of fire are not exclusively of Persian origin (in Graef, I, p. xx).

<sup>2</sup> Burnouf, *Légende Athénienne*, pp. 53–61; *Ville et Acropole d'Athènes*, p. 179; Penrose, *Trans. Royal Soc. London*, CLXXXIV, 1893, pp. 809, 827, 828; CXC, 1897, p. 45. A. Mommsen more conservatively obtained Aug. 31, 458 B.C. (*Bursian's Jahresbericht*, LXXIII, 1892, pp. 22–25; *Feste der Stadt Athen*, p. 55).

<sup>3</sup> Penrose obtained  $12^{\circ} 52' 41''$  west of true north for the east front of the Parthenon, and  $12^{\circ} 53' 59''$  north of true east for the north flank (*Athenian Architecture*,<sup>2</sup> p. 8; cf. *Trans. Royal Soc.*, 1893, p. 809). This is sometimes expressed as  $257^{\circ} 7'$  from south (Penrose, *op. cit.*, Nissen, *Orientation*, p. 169). The older and less accurate magnetic observations vary from  $13^{\circ} 0'$  to  $14^{\circ} 22'$  north of east (see table given by Nissen).

<sup>4</sup> The measurements of distance and height are taken from the map of the Hymettus district by Steffen and Kaupert (Curtius and Kaupert, *Karten von Attika*, pl. IV), prolonging the axis of the Parthenon to the crest and reading the level of the crest by means of the contour lines.

<sup>5</sup> Penrose, *Trans. Roy. Soc.* 1893, p. 818.

<sup>6</sup> This is the result obtained through direct observation by Penrose (*ibid.*, p. 809).



this point the sun would rise, as seen from the Parthenon, on two occasions in the year, sixty-three days before or after the summer solstice.<sup>1</sup> The earlier date, in April, would be meaningless;<sup>2</sup> but the later date, in August, may well have had some connection with the great day of the Panathenaic festival, the fiscal new year, the third from the last day (τρίτη φθινοῦρος) of Hekatombaion.<sup>3</sup> To test this possibility, we compare in the following table the theoretical Panathenaic dates (b), as derived by orientation from the summer solstice (a), with the theoretical Panathenaic dates (e) as derived from the lunar months (c, d). For convenience, the orientation of the rising sun (f) is added for each of these Panathenaic dates (e).

	(a) <sup>1</sup> Summer Solstice	(b) 63 Days Later	(c) <sup>2</sup> Nearest New Moon	(d) <sup>3</sup> νομηνία	(e) τρίτη φθινοῦρος	(f) <sup>4</sup> Orientation
490	June 29, 4 P.M.	Aug. 31	Aug. 25, 7:45 A.M.	Aug. 27	Aug. 24	16° 4'
489	" 28, 9 P.M.	"	Sept. 12, 1:45 A.M.	Sept. 14	Sept. 11	7° 34'
488	" 29, 4 A.M.	"	" 1, 7:45 A.M.	" 3	Aug. 31	12° 53'
487	" 29, 9 A.M.	"	Aug. 21, 9:00 P.M.	Aug. 23	" 20	17° 46'
486	" 29, 2 P.M.	"	Sept. 9, 10:00 P.M.	Sept. 11	Sept. 8	9° 2'
485	" 28, 9 P.M.	"	Aug. 29, 2:30 P.M.	Aug. 31	Aug. 28	14° 16'
484	" 29, 2 A.M.	"	Sept. 17, 3:00 P.M.	Sept. 19	Sept. 16	5° 5'
483	" 29, 9 A.M.	"	" 7, 0:15 A.M.	" 9	" 6	10° 0'
482	" 29, 2 P.M.	"	Aug. 27, 2:45 A.M.	Aug. 29	Aug. 26	15° 10'
481	" 28, 9 P.M.	"	Sept. 13, 8:15 P.M.	Sept. 15	Sept. 12	7° 4'
480	" 29, 2 A.M.	"	" 2, 9:45 P.M.	" 4	" 1	12° 25'

<sup>1</sup> The solstice dates are computed from Ginzel, *Chronologie*, II, p. 578, by transforming the tenths of days into hours and adding 1 hr. 35 m. for the difference between Greenwich and Athens.

<sup>2</sup> The dates of the new moons are computed from Ginzel, *Chronologie*, I, pp. 550-551, by transforming the hundredths of days into hours and minutes, and adding 1 h. 35 min. for the difference between Greenwich and Athens.

<sup>3</sup> The corresponding first day of the Attic month is here tentatively assumed to have begun, not at the time of the astronomical new moon (as I think was the case after Meton's reform; cf. *Archons of Athens*, pp. 313-315), but on the evening of the new light, when the crescent first became visible. Beginning on that evening, the next day would have been the first "business day" of the month, and is that recorded in the table (d).

<sup>4</sup> Taking the orientation 12° 53' north of east on Aug. 31, 488 B.C. as the standard, the variations for each of the preceding and following Panathenaia (e) are computed by means of the daily differences obtained from Nissen's table (*Templum*, p. 246). It must be pointed out that the theoretical Panathenaic dates (e) are modified in six instances by study of the calendar (table given below), and fall one month earlier than here shown. Consequently we should correct as follows: 489, Aug. 13, 20° 36'; 486, Aug. 8, 22° 24'; 484, Aug. 18, 18° 37'; 483, Aug. 7, 22° 45'; 481, Aug. 14, 20° 13'; 480, Aug. 3, 24° 3'.

It is possible, of course, that some latitude should be allowed for any unknown vagaries of the Attic calendar at this period; but it seems unlikely that it would have varied many days from the moon.<sup>4</sup> Therefore, if we find a correspondence in

<sup>1</sup> Nissen (*Orientation*, p. 169) says 64 days before or after the solstice, 30 days from the equinox. But since this total must be 93 days or slightly less, it is permissible to rectify his calculation to 63 days, particularly in view of the fact that his own results are based on a calculation of 63 days (i.e., April 27 to Aug. 30 = 126 days inclusive).

<sup>2</sup> It was the adoption of this earlier date, for the purpose of coinciding with the heliacal rising of the Pleiades, that led Penrose astray.

<sup>3</sup> This has been suggested by Burnouf (*Legende Athénienne*, pp. 53-61), Nissen (*Rh. Mus.* XL, 1885, p. 336; *Orientation*, pp. 169-171), A. Mommsen (*Bursian's Jahresbericht*, LXXIII, 1892, pp. 22-25; *Feste der Stadt Athen*, p. 55), and Ginzel (*Woch. kl. Phil.* 1908, p. 259).

<sup>4</sup> Among the evidences of such vagaries, we may cite that of the battle of Plataea in 479 B.C. on Boedromion 3 (Plutarch, *Camillus*, 19, 3; *Glor. Ath.* 7) or 4 (Plutarch, *Aristeides*, 19), equivalent to

the days between columns (b) and (e), we have reasonable assurance that we have found the correct year. An exact correspondence occurs only in 488 B.C., which is approximately the year required by the architectural evidence. Other years which would be architecturally suitable, 489 and 487 B.C., show impossible astronomical discrepancies of eleven days, equivalent to 5 degrees of orientation. Also 490 B.C. yields a discrepancy of seven days, and would be impossible in any case since the Panathenaic festival occurred before the battle.<sup>1</sup> And 485 B.C., which shows an admissible astronomical discrepancy of three days, is architecturally too late.

Before we can accept this astronomical evidence with full confidence, it is desirable to check it with reference to the Athenian calendar of this decade. The single fixed date hitherto known was the solar eclipse of Oct. 2, 480 B.C., at 3 P.M., which according to Herodotus (IX, 10) was the cause of the Spartan retirement from the Isthmus, apparently just after the battle of Salamis. The battle itself was

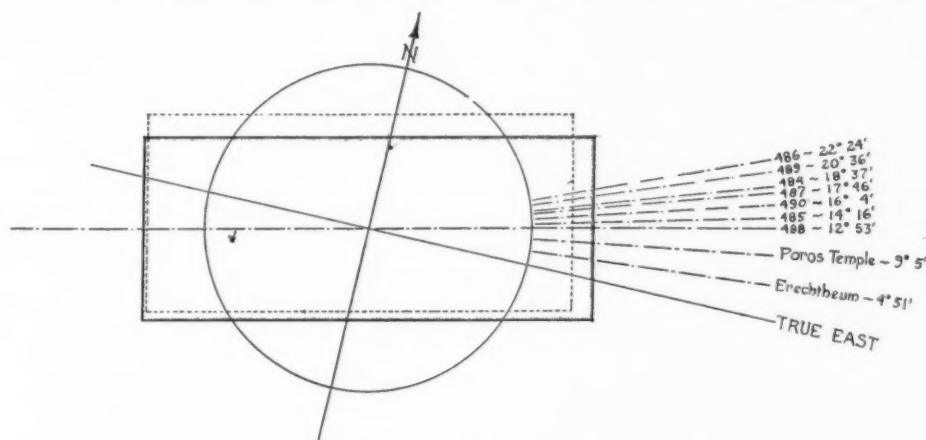


FIG. 12.—ORIENTATION OF THE OLDER PARTHENON

Panamos 26/27, a difference of 7-8 days on which Plutarch dwells at length. But this was the local Boeotian calendar, which was irregular as late as the second century, when we have Thouios 1 = Homoloios 16 *κατὰ θεόν* (I.G. VII, 517; Dinsmoor, *Archons of Athens*, p. 416 n. 2), a difference of 44-45 days. The discrepancies in the dates of the battles of Marathon and Salamis, on the other hand, must be due to errors of other sorts, as discussed below.

<sup>1</sup> Seltman (*Athens, Its History and Coinage*, p. 103) suggests that the battle, which he follows Busolt in equating with Aug. 10, 490 B.C., occurred before the Panathenaia. But this, of course, is impossible, because, whatever the Julian date of the battle, the Attic date (in Metageitnion or Boedromion) must have been later than Hek. 27/28. We may, I think, disregard Unger's proposal (*Jb. kl. Phil.* CXXVII, 1883, pp. 387-389) to locate the battle on Thargelion (1)6, 490 B.C., on the basis of intricate calculations and a corrupt passage of Aelian (*Var. Hist.* II, 25). On the other hand, the Panathenaia of 490 could have been later than the battle if we accepted Munro's date of 491 B.C. for this event (*Cambridge Ancient History*, pp. 233, 245 n. 1, 253 n. 1). But apart from the inherent improbability of such a year for Marathon, which disagrees with all our evidence (particularly that which specifies that it was ten years before Salamis in 480 B.C., as fixed by the Olympic festival and a solar eclipse), the astronomical discrepancy of seven days in Aug. 24-31 would be an obstacle against dating the Older Parthenon in 490 B.C. Conversely, the date of 488 B.C. for the Older Parthenon would add one more objection to placing Marathon in 491, as much as three years earlier.

fought on Boedromion 20 (Polyaenus, III, 11, 2), or "in the twenties of Boedromion" (Plutarch, *Camillus*, 19, 6), which agrees with the story of Herodotus (VIII, 65) with regard to the phantom Iacchic procession preceding the battle, and with our more general knowledge that it was in the autumn (Herodotus, VIII, 113, 130). The most probable date is Boedromion 24 or 25.<sup>1</sup> Plutarch's alternative date, Mounichion 16 (*Lysander*, 15; *Glor. Ath.* 7), cannot be explained except as an error; for this would have been about 145 days earlier, in the spring.<sup>2</sup> With our knowledge, therefore, that Boedromion 20 (+) was shortly before Oct. 2, we find that the new year must have coincided with the new moon of July 5 (9:30 P.M.), the actual new year's day probably being July 7, 480 B.C. With our new synchronism Hek. 27/28 = Aug. 31, 488 B.C., we obtain a new year Aug. 4/5, probably Aug. 5 (new moon Aug. 4, 8:15 A.M.).<sup>3</sup> The interval comprised 2893 days, that is, 98 lunar months, including six ordinary and two intercalary years.<sup>4</sup> To avoid three ordinary years in succession, it is necessary to assume that the two intercalary years were 486/5 and 483/2 B.C. Consequently 489/8 and 480/79 B.C. would likewise have been intercalary, and 490/89 B.C. ordinary, placing the new year of 490 B.C. twenty-five lunar months before Aug. 5, 488 B.C., and so on July 29, 490 B.C. The battle of Marathon, according to Plutarch (*Camillus*, 19, 5; *Mal. Herodot.* 26; *Glor. Ath.* 7) was fought on Boedromion 6, a date which cannot be reconciled with Herodotus, as Plutarch himself admits (*Mal. Herodot.* 26). For Herodotus tells us that Pheidippides, after traveling to Sparta in two days, received his answer on the 9th day of a month (VI, 106) while the Spartans, starting as soon as it was full moon, reached Attica in three days, just after the battle (VI, 120), or, as Plato says (*Laws*, III, p. 698 E; *Menexenos*, p. 240 C), one day after the battle. And Herodotus, though accused by Plutarch of deception, is approved by modern authorities.<sup>5</sup> There

<sup>1</sup> Busolt (*Gr. Gesch.*, II, pp. 702, n. 2, 704 note; followed by Hauvette, *Hérodote*, p. 414) calculates that Sept. 27 or 28, when the moon did not rise until 12:58 or 1:55 A.M. respectively, would have fitted the accounts of the preliminaries of the battle. As Boedromion began 59 days after July 7 and so on Sept. 4, Busolt's dates would be equivalent to Boed. 24-25. Others have confined Polyaenus and Plutarch too literally to Boed. 20 or 21 (Böckh, *Mondeyklen*, p. 73; Beloch, *Gr. Gesch.*, II 2, p. 48; Macan, *Herodotus VII-IX*, p. 293) equating this with Sept. 20, 23, or 24 (Munro, *Cambridge Ancient History*, IV, pp. 304, 313).

<sup>2</sup> Clinton (*Fasti Hellenici*, II, p. 32) regarded Moun. 16 as an error; Beloch (*Gr. Gesch.*, II 2, p. 48) suggests that Moun. 16 was the day of celebration, a festival of Artemis, and that Plutarch confused the two dates. Munro suggests that both dates are right, that Moun. 16 is Old Style and Boed. 20 is New Style (*Cambridge Ancient History*, IV, p. 313), and that the new year according to the old calendar occurred on Dec. 5, 480 B.C. He therefore deduces that the battle of Marathon, on Boed. 16, was on Thargelion 11 in Old Style (*ibid.* p. 245). But we have no authority for such a tremendous divergence; and, in detail, the date Boed. 20 is not explicit; Plutarch apparently implied Boed. 20-29. It seems preferable to regard Moun. 16 as a simple error.

<sup>3</sup> With the new year on Aug. 5, Hekatombaion would have been a hollow month, with the Panathenaia on Hek. 27.

<sup>4</sup> One of the ordinary years would have contained 355 instead of 354 days (if this calculation is correct), thus fitting octaeteris no. 3 as described in my *Archons of Athens*, p. 305. In default of evidence as to the location of this augmented year, I have tentatively placed it in the middle of the series (485/4).

<sup>5</sup> Clinton (*Fasti Hellenici*, II, p. 28) merely assumed that the civil calendar (Plutarch) disagreed with the lunar month (Herodotus). It is generally argued, however, that Plutarch's date Boed. 6 is merely that of the celebration and that the battle was on the second day after the full moon of the preceding month Metageitnion, and so on Met. 17 (Böckh, *Kl. Schriften*, IV, pp. 85-97; *Jb. kl. Phil. Suppl.* II,

seems to be a way of explaining the discrepancy. For Boedromion 6 may well have been the day on which, Miltiades having the turn as chief general, the decree was passed to engage the Persians in battle at Marathon and a corresponding vow made to Artemis Agrotera, the patroness of that day. Pheidippides would likewise have set out on that day for Sparta, arriving on the 8th. After nine days of inaction at Marathon, the battle took place when Miltiades again received his turn in rotation on the 16th. The Spartans, starting on the 14th, arrived on the 17th.<sup>1</sup> The festival was thereafter celebrated on the day of Artemis Agrotera, Boed. 6, as Plutarch expressly states (*Glor. Ath.* 7); and he confused it with the actual date of the battle, ten days later.<sup>2</sup> The date of the actual battle, Boed. 16, would have been Oct. 11, 490 B.C.<sup>3</sup> The resulting calendar of the period of the Persian Wars is as follows:

	Hek. 1		Days	Events
490	July 29	O	354	Marathon, Boed. 16 = Oct. 11
489	July 17	I	384	
488	Aug. 5	O	354	Parthenon, Hek. 27 = Aug. 31
487	July 25	O	354	
486	July 14	I	384	
485	Aug. 1	O	355 (?)	
484	July 22	O	354	
483	July 11	I	384	
482	July 30	O	354	
481	July 18	O	354	
480	July 7	I	384	Salamis, Boed. 24/25 = Sept. 27/28
479	July 26	O	354	Plataea, Boed. 3/4 = Sept. 25/26

pp. 64-73). Hauvette (*Hérodote*, p. 270) preferred Met. 16 for the reason discussed below, and was followed by Meyer (*Gesch. Alt.* III, p. 334). The return to Boedromion, and the placing of the battle on the 16th of that month (ten days after rather than twenty days before Plutarch), was sponsored by Grundy (*Great Persian War*, pp. 173, 182-183, 193) and Munro (*Cambridge Ancient History*, IV, pp. 243, 245).

<sup>1</sup> Assuming that the full moon could not have appeared until the 15th, it has been generally assumed that the Spartans arrived on the 18th (Clinton, *Fasti Hellenici*, II, p. 28; Böckh, *Jb. kl. Phil. Suppl.* I, 1855, pp. 64-73; etc.). Beloch (*Gr. Gesch.* II 1, p. 22, n. 2; II 2, pp. 56-57), furthermore, entirely discards the tradition on the ground that it would have taken the Spartans at least five, and probably seven days to cover the distance, arriving on the 22nd. But with Boed. 1 = Sept. 26, the full moon of Oct. 8, 4:15 P.M. would have occurred on Boed. 13, if the Spartan calendar then coincided with the Athenian; so that the Spartans might in any case have started on Boed. 14. And the fact that the distance of 1160 stadia = 222 km. (Pliny, *H.N.* VII, 84; Isocrates, *Paneg.* 87; cf. Busolt, *Gr. Gesch.* II, p. 580, n. 1) was traversed in the time indicated seems possible for the special small force of 2000 men.

<sup>2</sup> This follows the explanation given by Hauvette, who applied it, however, to Metageitnion of 490 B.C.; his assumption that the vow was made on Met. 6 (ten days before Miltiades resumed command and delivered battle), and that the celebration was held exactly a month after the vow and so on Boed. 6, lays too much stress on the senseless observance of an exact month for the interval. Grundy applied the same explanations to Boedromion of 490, and Munro to Boedromion of 491 B.C.

<sup>3</sup> The date Metageitnion 17 was equated by Böckh with Sept. 12, that of Met. 16 with Sept. 10 by Meyer. Busolt argued that this was too late for a campaign begun in the spring and so preferred Aug. 12/13 (*Gr. Gesch.* II, pp. 580 n. 3, 596, n. 4). Beloch, abandoning most of the literary tradition, assumes that the battle took place about four days after the full moon of Aug. 10 or Sept. 9 (*Gr. Gesch.* II 2, pp. 56-57). Munro equates Boed. 16 = Sept. 21, 491 B.C. (which he assumes to be a reformed Metonic date, and that the contemporary calendar date would have been Thargelion 11); he argues that the full moon of Oct. 8, 490 B.C., would also have been too late in the season; and that this was one of the reasons for his preference for 491 B.C. But, as Hauvette points out, Busolt's citations from

In order to confirm the calendar arrangement for this decade, it would be desirable to connect with other known dates both before and after it. Unfortunately, we have no other definite dates until we reach July 15, 432 B.C., the initial day of the Metonic calendar;<sup>1</sup> and we cannot be certain as to the precise relationship between the Metonic cycle and the preceding octaeteris. It has been noted that between the new year of 480 B.C. (July 7) and that of 432 B.C. (July 15) would have elapsed 594 lunar months and hence exactly six octaeterides of 99 months each.<sup>2</sup> But we have no assurance that 432 B.C. marked the end of an octaeteris; nor was Meton more likely to have awaited such an event than did Kallippos in 330 B.C. The intercalations within the octaeterides were undoubtedly irregular, so that the interval of 594 months may be regarded as a mere coincidence, of no more significance than if there had been 593 or 595 months.<sup>3</sup> A more reasonable system for the beginnings of octaeterides would have been their coincidence with Panathenaic years. If, for instance, we take 486 B.C. as such an initial year, the connection with the Metonic new year in 432 B.C. would be as follows:<sup>4</sup>

	New Moon	Hek. 1	Length of Octaeteris
486	July 13, 5:30 A.M.	July 14	2923 days
478	" 14, 0:45 P.M.	" 15	" "
470	" 15, 8:15 P.M.	" 16	" "
462	" 17, 5:00 A.M.	" 17	" "
454	" 18, 5:15 P.M.	" 18	" "
446	" 20, 8:15 A.M.	" 19	" "
438	" 22, 3:00 A.M.	" 20	2187 "

It is apparent, in this scheme, that the initial day of the octaeteris was gradually falling behind the moon, a defect which must have been one of the causes of Meton's reform. It is also apparent that the unfinished octaeteris beginning in 438 B.C. would have comprised 2187 days or 74 lunar months, corresponding to two intercalary and four ordinary years, with two or three extra days inserted to correct the lunar calendar.<sup>5</sup> While this tabulation may in itself seem very hypothetical, its probability is greatly strengthened when we carry it back in the opposite direction. For exactly ten octaeterides or 990 lunar months earlier than 486 B.C. bring us to the notable year 566 B.C., when the Panathenaic festival was reorganized on a quadrennial basis (Pherecydes<sup>6</sup> and Eusebius<sup>7</sup>). And in this notable year, furthermore,

Herodotus (VI, 43, 48, 95) do not prove that the campaign was begun very early; and the same observation would apply to Munro's objections to the October date. There seems to be no necessity, therefore, for adopting the Böckh-Hauvette expedient of assigning the battle to the preceding month, Metageitnion (thus dating it Sept. 11/12).

<sup>1</sup> For the establishment of this date, see my *Archons of Athens*, pp. 311-317.

<sup>2</sup> West, *A.J.A.* 1934, p. 7.

<sup>3</sup> In other words, there is no need to regard 488 and 480 B.C. as the beginning and end of an octaeteris, for which the interval of 98 months, according to my scheme, would in any case have been insufficient.

<sup>4</sup> The dates of the astronomical new moons are computed from Ginzel's tables as noted above.

<sup>5</sup> In other words, it is possible to adopt the conclusion reached by West (*A.J.A.* 1934, p. 9), that Meton did not alter the arrangement of the months, and that 433/2 was an ordinary year, a question on which I had previously been unable to reach a decision (*Archons of Athens*, p. 317).

<sup>6</sup> Pherecydes, in Didymus, as quoted by Marcellinus, *Thucydides*, 3 (cf. Müller, *Frg. Hist. Gr.* I, p. 73; Jacoby, *Frg. Gr. Hist.* I, pp. 59-60): "in the archonship of Hippokleides."

<sup>7</sup> Eusebius, trans. Hieronymus (ed. Helm, 1913, p. 102; Fotheringham, 1923, p. 181), Abr. 1451 = Ol. 53, 3; Armenian trans. (ed. Karst, 1911, p. 188), Abr. 1451 = Ol. 53, 4 (the Olympic date being as usual one year too late); cf. Georgius Syncellus (ed. Dindorf, 1829, p. 454, 8).



the initial day of the octaeteris, the day of the *visible* new moon, would coincide with the summer solstice, an appropriate occasion for beginning this luni-solar system. The exact distribution of the individual days must remain slightly uncertain; I have assumed that the series began with the more normal octaeteris of 2922 days, and that this by observation was immediately found to be inadequate and was replaced successively by those of 2923 and 2924 days,<sup>1</sup> eventually returning to 2923 days in the time of Kleisthenes; but there are other possibilities.

	New Moon	Hek. 1	Length of Octaeteris
566	June 27, 11:15 P.M.	June 29	2922 days
558	" 29, 6:30 A.M.	" 29	2923 "
550	" 30, 1:15 P.M.	" 30	2924 "
542	July 1, 10:45 P.M.	July 2	" "
534	" 3, 10:45 A.M.	" 4	" "
526	" 5, 2:00 A.M.	" 6	" "
518	" 6, 9:00 P.M.	" 8	" "
510	" 8, 3:30 P.M.	" 10	" "
502	" 10, 7:45 A.M.	" 12	2923 "
494	" 11, 8:30 P.M.	" 13	" "
486	" 13, 5:30 A.M.	" 14	" "

In view of this agreement of the resulting calendar with all the required conditions, we may conclude that the axis of the temple, and the perimeter of the foundation, were staked out at sunrise on Aug. 31, 488 B.C.<sup>2</sup>

\* \* \* \* \*

According to this chronology, it was nearly twenty-three months after the victory of Marathon that the great temple intended to commemorate it was laid out. The interval, however, is easily explained. As Dörpfeld pointed out,<sup>3</sup> Aristeides, the archon of 489/8 B.C., was ἐπιμελητὴς τῶν δημοσίων προσόδων (Plutarch, *Aristeides*, 4, 3), and as such is most fittingly to be regarded as the sponsor of the marble pre-Persian Parthenon. But the design could not have been executed, the finances diverted toward this purpose, and preliminary operations carried out at the quarries, in the few days between his accession to office and the festival of 489 B.C. The actual beginning of the work was postponed, therefore, until the following Panathenaic festival of Aug. 31, 488 B.C. It is upon Aristeides, nevertheless, that we are to look, not merely as the continuator of an earlier project of Kleisthenes, but as the originator of the plan for replacing the old poros temple of the Peisistratidae by a monumental structure crowning the south flank of the citadel.

This determination of the date of the great temple destroyed during the burning of the Acropolis on Sept. 25/26, 480 B.C., two days before the battle of Salamis, is of more importance than the mere dating of a single building. It marks the beginning of an epoch, that of construction in Pentelic marble, and was apparently the project for which the Pentelic quarries were first worked on a large scale.<sup>4</sup> We now

<sup>1</sup> On the various lengths of octaeterides, see *Archons of Athens*, pp. 303-305.

<sup>2</sup> On the Panathenaic procession starting at sunrise, see *I.G.*<sup>2</sup> II, 334; Himerius, III, 16.

<sup>3</sup> Dörpfeld, *Ath. Mitt.* 1902, p. 411.

<sup>4</sup> This forms an additional reason for dating Athenian buildings in island marble, such as the treasury and stoa at Delphi, before rather than after 490 B.C.

see that it was part of a grandiose scheme for the reconstruction of the Acropolis, a scheme of which the technically similar old Propylon formed another unit. Thus we may clarify also the problem of the Old Propylon, which is now likewise fixed in the period 489–480 B.C. and probably, in view of a slightly less developed technique, in the first half of this decade, the work of the same group of stonecutters who produced the Marathon base.<sup>1</sup> And the first two lines of the latter, in turn, are apparently by the same scribe who carved the “Hekatompedon inscription” (*I.G.*<sup>2</sup> I, 3/4),<sup>3</sup> at the time of the building of the Propylon,<sup>3</sup> so that we may retain the name of the archon as Φ[ιλοκράτος] (485/4 B.C.) instead of some unknown individual before 506 B.C. as has been recently suggested.<sup>4</sup> And we now see that it was probably to this great building program of Aristides that Demosthenes referred (XXII, 13), when he somewhat ambiguously stated that the Parthenon and Propylaea were built from the spoils of Marathon. Furthermore, the new system of dimensions and proportions, and even the very materials, prepared for this Older Parthenon, were incorporated in, and thus influenced the design of the masterpiece by Iktinos which we see to-day, completed and dedicated at the Panathenaia of 438 B.C., exactly on the fiftieth anniversary of the laying out of the basement.

WILLIAM BELL DINSMOOR

COLUMBIA UNIVERSITY  
New York

<sup>1</sup> *I.G.*<sup>2</sup> I, 763; *Hesperia*, II, 1933, p. 480.

<sup>2</sup> Wilhelm, *Ath. Mitt.* 1898, p. 489; Miss Spaulding, *A.J.A.* 1906, p. 404; Oliver, *Hesperia*, 1933, p. 486.

<sup>3</sup> This discussion of the date of the Propylon will be amplified in my monograph on the Propylaea.

<sup>4</sup> Luria, *Hermes*, 1927, pp. 270–272; Dörpfeld, *Phil. Woch.* 1929, 1247.

ARCHAEOLOGICAL NEWS AND DISCUSSIONS<sup>1</sup>  
NOTES ON RECENT ARCHAEOLOGICAL EXCAVATIONS  
SUMMARIES OF ORIGINAL ARTICLES CHIEFLY IN  
CURRENT PUBLICATIONS

DAVID M. ROBINSON, *Editor*  
Johns Hopkins University, Baltimore

EGYPT

**Egyptian Illumination.**—MAX PIEPER discusses, somewhat meagerly, Egyptian illustrated manuscripts and their possible influence. There are some papyri with pictures and no text. The oldest existing text with illustrations belongs to the Middle Kingdom and deals with ceremonies at the coronation of Senusert I. But the great mass of the material belongs to the "Book of the Dead", most of it to the nineteenth dynasty. Some scenes are mythological, some symbolic. The continuous style is sometimes employed. Clear relations with later miniature styles are not discovered; but the author approves Wulff's suggestion, that Early Christian illumination was preceded by a Hellenistic-Jewish style in which Egyptian influence was strong. *Jb. Arch. I.* xlviii, 1933, pp. 49-54.

<sup>1</sup> The department of Archaeological News and Discussions and of Bibliography of Archaeological Books is conducted by Professor DAVID M. ROBINSON, Editor-in-charge, assisted by Professor SAMUEL E. BASSETT, Professor CARROLL N. BROWN, Miss MARY H. BUCKINGHAM, Dr. MARIAN G. CARPENTER, Professor SIDNEY N. DEANE, Professor ROBERT E. DENGLE, Professor VLADIMIR J. FEWKES, Professor JOHN W. FLIGHT, Professor HAROLD N. FOWLER, Professor HENRY S. GEHMAN, Mr. E. BIÖREN GETZE, Professor FRANKLIN P. JOHNSON, Professor ROLAND G. KENT, Dr. STEPHEN B. LUCE, Professor CLARENCE MANNING, Professor GEORGE E. MYLONAS, Professor JOHN C. ROLFE, Professor KENNETH SCOTT, Professor JOHN SHAPLEY, Professor EPHRAIM E. SPEISER, Professor FRANCIS J. TSCHAN, Professor AXEL J. UPPVALL, Professor SHIRLEY H. WEBER, Professor FRED V. WINNETT, and the Editors.

No attempt is made to include in this number of the JOURNAL material published after June 30, 1934.

For an explanation of the abbreviations see Vol. xxiv, 1, p. 124, and Vol. XXIX, 1, pp. 115-116.

**Nefertém and Miysis.**—ALEXANDRE PIANKOFF studies the iconography of these two Egyptian gods, the second of whom, a lion-god, he considers to be very probably a personification of an epithet ("fierce lion") of the first, who sometimes appears as lion-headed. He believes that the representations of Miysis biting a captive have their origin in the scenes of the New Kingdom in which a lion accompanies the king in battle and is sometimes seen attacking an enemy. "Nefer-Toum et Mahes" in *Egyptian Religion*, I, 1933, 3, pp. 99 ff.

**"Pistis Sophia" and Egyptian Mythology.**—FRANTIŠEK LEXA compares the ideas in the famous Gnostic work with Egyptian myths dealing with the Eye of Ré, notably the version given in the long demotic text of Leyden Pap. I 384, published fully by Spiegelberg, *Der ägyptische Mythos vom Sonnenauge*. He quotes abundantly from those parts of the Coptic work which deal with the departure of Pistis Sophia from the Thirteenth Aeon, her sufferings in Chaos and her restoration to the Thirteenth Aeon by Jesus, and finds that it follows the Egyptian myth in which the Eye of Ré (the sun-god) either in its own form or in that of the goddess Hathor-Téfenis, departs from Ré, and after suffering on account of its separation from its possessor, is brought back to its place by Thoth, sent by Ré for that purpose. Lexa proposes the following identifications: The Light, or the First Mystery = Ré; Pistis-Sophia = the Eye of Ré, or Hathor-Téfenis; Jesus = Thoth. "La légende gnostique sur Pistis Sophia et le mythe ancien égyptien sur l'œil de Ré" in *Egyptian Religion*, I, 1933, 3, pp. 106 ff.

THE ORIENT

ASSYRIA AND BABYLONIA

**Stamp Seals.**—The problem of stamp seals is discussed by ERNST HERZFELD in *Archaeologische Mitteilungen aus Iran*, v, pp. 49-103. While the

form of the cylinder seals was suggested by beads, stamp seals were modeled after actual buttons. The seals are distinguished as Elamito-Caspian and Hittite, and similarities in shapes and designs suggest to the author prehistoric ethnic connections.

**The Annals of a Hittite King.**—In *Mitteilungen der Vorderasiatisch-ägyptischen Gesellschaft*, Vol. 38, 1933, pp. 329, *Die Annalen des Muršiliš*, ALBRECHT GÖTZE gives a complete edition of what is at once the most extensive historical writing from the archives of Boghazköi, a historical source of the first rank, extending over nearly a generation, and the earliest known example of the annalistic form later used by the Assyrians.

The fragments are arranged chronologically, and the two versions, namely the "Ten-years' Annals," covering the first ten years of the reign of Muršiliš, and the "Detailed Annals" of the whole reign, are as far as possible printed in parallel form on the same pages for comparison. All the texts published by Forrer have been included, and the editor believes that he has in many cases made an advance in the restoration of lacunae. The transcription and translation occupy 184 pages, and there are 77 pages of commentary, which is philological, historical details being discussed only when desirable to elucidate the meaning. The introduction discusses the sources, the fragments being grouped by the editor in three series, the large, middle and small. A chronological discussion, based on datings of Egyptian kings of the eighteenth and nineteenth dynasties, places the reign of Muršiliš between the limits 1356 and 1319 B.C.; the solar eclipse postulated and used chronologically by Forrer is here disregarded as being based on an arbitrary interpretation.

**Pictographic Records.**—In *J.A.O.S.* 54, 1934, pp. 75-79, PROFESSOR G. A. BARTON discusses the relation of the pictographic tablets discovered at Jemdet Nasr in 1926 (cf. S. Langdon, *Oxford Edits. of Cuneiform Texts*, Vol. VII) with the "third race" in ancient Mesopotamia, and the bearing of this relationship upon the Sumerian language. By a brief and suggestive linguistic argument Barton shows how certain words, notably such as were connected with the fishing industry, may have been borrowed by the Sumerians, originally a mountain people, from the Asianic-Elamite race which preceded them in the fish-producing country. If Sumerian as spoken and written was thus compounded of two languages, attention to this fact may throw light upon

certain hitherto puzzling questions connected with the polyphony of the Sumerian syllabary.

#### SYRIA AND PALESTINE

**Syro-Hittite Art.**—In *Archiv für Orientforschung*, ix, pp. 1-34, VICTOR CHRISTIAN reviews the problem of the so-called Syro-Hittite art. His conclusions may be summarized as follows: The Aegean migrations of ca. 1200 B.C., which were represented in Asia Minor by the arrival of the Phrygians and the Mushki, resulted among other things in a stylistic change in the art of Asia Minor, Northern Syria, and Mesopotamia. Just as in Greece, naturalism gives way to the geometric style. From the culture of their predecessors (Hurrians) the invaders took over the idea of utilizing orthostates in building and of ornamenting them with reliefs. Carried over were also numerous motifs. This eclectic type of art, which has been misnamed Syro-Hittite, is finally terminated by the Assyrian invasions, not, however, without having left its mark upon the sculptures of Assyria, Armenia, and Persia.

**Ras Shamra.**—An interesting survey of the finds at Ras Shamra is given by Prof. JOHANNES FRIEDRICH in *Der Alte Orient*, Bd. 33, Heft 1/2, 1933, 38 pp. There are 8 illustrative plates, bibliography, and a fresh translation of the text published by Bauer in *Z.D.M.G.*, N.F. 9, 1930, pp. 251-254, and of portions of the myth of Môt and 'Al'i'yân Ba'al. In discussing the new Semitic language of the Ras Shamra texts, Friedrich points out that, to judge from the evidence of the script, it can be classed neither as Aramaic nor as Canaanite but has points in common with both and also with Akkadian. Thus it retains the proto-semitic *t* (preserved in Arabic but become *š* in Canaanite and *t* in Aramaic); it has the Canaanite *q* (become *q* in Arabic and ' or *q* in Aramaic); it has the Aramaic *d* (become *z* in Canaanite and *d* in Arabic). It resembles Arabic in differentiating *h* and *h* (merged in *h* in Canaanite and Aramaic); whether ' and *gh* are differentiated is not yet certain. Like Canaanite it forms the masc. pl. by the addition of the suffix *m*; unlike it, *ā* does not become *ō*. Thus the new language cannot be brought into specially close relation with any other Semitic language. It can be most easily connected with Canaanite and Aramaic under the higher entity "Northwest Semitic." In his discussion of the verb, Friedrich points out that the Imperfect without Waw Consecutive is used as an Aorist, as is the Akkadian preterite.

This is a point which Albright seems not to have recognized or at least only imperfectly in his translation of the Myth of Mōt and 'Alī'iyān Ba'al (*J.P.O.S.* 12, 1932, pp. 185-208), for he sometimes renders an Imperfect by a Future, sometimes by a Past, e.g. in Col. ii, l. 6 he renders *tngh* by "thou shalt attack him," but in l. 27 by "(she) attacked him"; in l. 9 he renders *t'ehd* by "thou shalt seize," in l. 30 by "she seized." The Perfect is of less frequent occurrence and is equivalent to a Present Perfect.

**Athlit.**—The results of a sounding made in 1932 about 100 m. east of the fosse and the discovery of more sherds at the foot of the *tell* on the north beach, these in conjunction with the results obtained the preceding year at the southeast cemetery, enable the history of the site of Athlit to be reconstructed as follows: there were three main periods of occupation: (1) the transition period between Middle and Late Bronze, the sixteenth and fifteenth centuries B.C.; (2) part of the Persian and Hellenistic periods, fifth to second centuries B.C.; (3) the Crusader period (1217-91) and early Mamluk. But there was no long break between any of these periods, except from the Arab conquest to the coming of the Crusaders. The outer defences of the castle, as cleverly reconstructed and interpreted by M. JOHNS, are an excellent example of mediaeval military engineering. *Q.D.A.P.* iii, 1933, pp. 145-164, 8 plates and contour map.

**Jerash.**—The spring campaign of 1933 has brought the planning of the Hippodrome several steps nearer completion. The main entrance was discovered on the main axis of the north curve; one of the six side-entrances was excavated (the others were probably of the same pattern); half of the *carceres* on the south side were also cleared, and three different areas on the west side in order to determine the exact location of the western wall and to examine the nature of some of the openings and arches in it. The south side of the great Triumphal Arch was also cleared, revealing the existence of two wings with niches meant perhaps for monumental statues. HORSFIELD and DETWEILER would date the Arch, on the basis of architectural evidence alone, to about the middle of the second century A.D. The wings appear to have been added subsequently. *B.A.S.O.R.* 53, 1934, pp. 2-13.

**Persian Period of Jewish History.**—Archaeology provides us with two kinds of evidence for this period: some stamped jar-handles, and a few coins.

In *B.A.S.O.R.* 53, 1934, pp. 20-22, ALBRIGHT, on the basis of the pottery types, dates the jar-handles as follows: (1) those with the 4-letter stamp (*ha'ir* "the city," according to Sukenik) to the fifth century B.C.; (2) those with the 5-letter stamp (*Yerushalem*, acc. to Sukenik) to the fourth century B.C.; (3) those with the 3-letter stamp (*Yhd* "Judah," acc. to Sukenik) to the third century B.C. The coins are three: (1) the famous silver coin in the British Museum with the Aramaic legend read as *Yhw* and with what was thought to be a paganizing representation of Yahu; (2) a similar fourth century coin recently found by Sukenik in a Jerusalem collection, but which clearly has not *Yhw* but *Yhd* "Judah," the true reading no doubt of the first coin; (3) the coin found by Sellers and Albright at Beth-zur which bears the name of Hezekiah, probably the high-priest Hezekiah mentioned by Josephus and belonging to the Greek period. On the basis of the jar-stamps and coins Albright reconstructs the period as follows: the 4-letter stamps point to a period before the high-priests obtained control of the Jewish state for the monogram on the stamps also occurs on the fifth century ostraca from Elephantine and must, therefore, stand in some relation to the royal fiscus in Egypt. (But Palestine was under Persian control in the fifth century). In the fourth century the Persians have granted the high-priests the right to strike their own silver coinage, but the name *Yerushalem* on the jar-handles of this period suggests that their control was confined to the immediate territory of Jerusalem and did not extend over the whole of Judah. The Beth-zur coin and the *Judah* stamps point to the reorganization of the state under the Lagids of Egypt.

## GREECE

### GENERAL AND MISCELLANEOUS

**Archaeology in Greece, 1932-1933.**—The summary of last year's discoveries in Greek lands, by H. G. G. PAYNE, is based in part on published material but largely also on that furnished directly by the excavators. He reviews the results attained in Athens and Attica, the Peloponnese, Northwest Greece, Thessaly, Macedonia, the Islands, Crete, Cyprus, and Troy. The most important work in Athens, beside the American excavation of the Agora, is that of the Germans at the Ceramicus, where the burial-mound on which has stood the chapel of Hagia Triada, is found to have



contained graves as early as the seventh century, with much valuable evidence for early art, customs and chronology. A grave stele of Pentelic marble, uninjured and retaining much of the original paint, was found under the Sacred Way, and near the now fully identified Academy, nine graves containing the gold ornaments of Agonothetae. At Corinth, the new museum is installed; some late archaic terracotta figures in high relief, apparently from the pediment of a temple, were found near it. On the Isthmus, the only archaic and classical site is found farther west than the supposed position of the temenos of Poseidon. At Perachora, on the site of the removed chapel of St. John, are the foundations of a pure geometric apsidal temple, laid in a stratum of prehistoric pottery, and the temple repository has yielded the most perfect model yet known of a geometric building, not later than 750 B.C. Some early dedications are to Hera Leukolenos. Greek excavations have been carried on at Sicyon, Pellene (Achaia), Alipheira (Arcadia), Thermon (Aetolia), Dodona, and in Cyprus. Dörpfeld sees the Phaeacian Scherie in a prehistoric settlement on the west coast of Corfu. In Ithaca, a local Protocorinthian vase is signed in Corinthian letters by one Calicleas, and tripods on wheels are found in the Cave of Polis. The French have continued work at Philippi and Thasos and at Phaestos and Mallia in Crete, and members of the British School at Astacus (Acar-nania) and Antissa (Lesbos). At the Samian Heraeum the Germans find that the sacrificial area began at least before 2000 B.C. and continued without a break through Mycenaean into geometric and later eras. In Crete, some well-preserved Protogeometric and geometric chamber tombs have yielded objects of great interest, including Cretan bronze reliefs, a Cretan alabastron and other transitional pieces, while from the Royal Tomb at Knossos comes a steatite seal thought to be Asiatic. At Troy, further digging and study of the stratification has confirmed and greatly amplified evidences of the history of the site. *J.H.S.* liii, 1933, pt. 2, pp. 266-299; 21 figs.

**Recent Work in Archaeology.**—The usual compendious *Bulletin Archéologique*, in *R. Ét. Gr.* xlvi, 1933, pp. 70-157 (24 figs.) presents a digest of classical archaeology as published in the books and articles of the preceding year or two. The list of prizes awarded by the Association pour l'encouragement des études grecques from 1868-1931, as published in *R. Ét. Gr.* xlvi, 1933, pp. xl-xlvi, presents a useful list of major Hellenic publica-

tions under French auspices for the years 1868-1931.

**Has the X-Ray a Place in the Archaeological Laboratory?**—In *Amer. Anth.* 35, 1933, pp. 297-300, P. F. TITTERINGTON describes certain x-ray experiments with archaeological specimens which led to the following observations: (a) opacities in flint were noted in artifacts made of coarser-grained nodular material; (b) examinations of stone pipes showed details of technique which would otherwise not be discernible; (c) interesting studies were made with pottery, especially in determining the type and quantity of tempering material. The author believes that the x-ray will have a definite place in archaeological laboratories.

**Chemistry and Archaeology.**—The details of the chemical analysis of a suspected ancient Greek bronze statuette are described by EARLE R. CALEY in *Technical Studies*, ii, 1934, pp. 144 ff. His method was to subject to analysis along with a boring from the statue, five ancient Greek bronze coins from Sicyon. Analysis of the statuette showed a proportion of zinc, a substance which did not appear in the coins, nor in the analyses of ancient Greek statuary from other localities. Impurities in the genuine ancient bronzes distinguish them from the modern ones which are composed of purer metal.

**Cremation in Aegean Lands.**—With a reminder that cremation was not known in the Mycenaean period but was the recognized custom in Homer, H. L. LORIMER reviews and analyzes the evidence of excavation on this subject for the interval between the fall of Mycenae and the beginning of the Geometric period (approximately 1100-900 B.C.) and later, and reaches some tentative conclusions as to the history of the rite on the shores and islands of the Aegean Sea, and on the Greek attitude toward the dead. Among the new cultural features appearing after 1100, such as the use of iron (at first in ornaments from Anatolia, later for weapons), the arched fibula, a form of straight bronze pin with bulb-shaped swelling below the head, knobs or cones on the disks of stirrup-jugs, and compass-drawn circles, the use of cremation came in gradually, apparently as a development of the existing Achaean culture, due perhaps to the disturbed and uncertain conditions of life, and not introduced by the invading Dorians but adopted by them in many places. A few early examples occur in Athens and Salamis, others associated with tumuli in Caria and Achaia

Phthiotis, many more in Crete and Rhodes; and in treeless Thera, strange to say, it was the usual custom during the Geometric period. This epoch, to which Homer belongs, was the time of its greatest prevalence; after that it disappeared to a great extent. Plato does not mention it among his funerary laws and Hellenistic scholiasts explain it as an ancient custom. It was revived by the wealthy Romans as the most aristocratic and impressive of funeral ceremonies. So it certainly appears in Homer. Cremation never gained a foothold in Egypt, and it was banned by the Christian Church as inconsistent with its doctrines. *J.H.S.* liii, 1933, pt. 2, pp. 161-180.

**The Tholos at Epidauros.**—FERNAND ROBERT in *R. Ét. Gr.* xlvii, 1933, pp. 181-196, discusses the cult purpose of the Tholos at Epidauros. After reviewing the earlier literature on the subject, M. Robert notes that the structure is referred to by Pausanias (II, 27, 3) not as a *tholos* but as a *thymela* (i.e. place of sacrifice, in many senses), which latter term is confirmed by the construction accounts, preserved in inscriptional material: *I.G.* iv<sup>2</sup>, 103, 11, 125 and 162. M. Robert believes that the central feature of the labyrinthine lower building at Epidauros was a *bothros*, where chthonic sacrifices (libations, blood offerings) were made, perhaps at the tomb of the Hero Asklepios himself. A very forceful argument in support of such a theory is found in the round temple at the centre of the Asklepios temenos on the south side of the Acropolis, whose central feature again is evidently a *bothros*. Two types of altars are often found in connection with chthonic worship, the solid type and the *bothros*, as two types of worship, heroic and divine, are also indicated. Reference is made to the recent publication of Marconi, *Agrigento*, where similar differences in altars have recently come to light, near the temple of Demeter Kore and of the Dioscuri. A study of the round temple of Palaemon at Corinth, as represented on coins, and its description in Paus. II, 2, 1 may help to picture the approach to and the use of the Adyton for the *enagisma* which M. Robert believes a parallel for the use of the lower building at Epidauros.

**Delian Ex-Votos.**—In a very long and detailed article in *B.C.H.* lvi, 1932, pp. 410-490 (pl. xxvii; 19 figs.), W. DÉONNA discusses types of ex-votos listed in the inventories prepared by the administrators of the temples at Delos. The article is divided into two parts. The first (pp. 410-420) discusses the offering, occurring several

times in these inventories, of a small ladder in gilded wood, surrounded by two serpents in silver. It is too small for practical use, and does not symbolize the profession or trade of the donor. It appears, according to Aelian (*Var. Hist.* ii, 29) in offerings of Pittakos of Mitylene, in the temples of that island. The ladder figures throughout antiquity as the symbol that unites heaven and earth; for example, we are all familiar with Jacob's ladder in the Bible. Various classical authors, such as Pindar and Aristophanes, use it in this way. Ladders are shown on late Attic vases, very often in scenes of women in their apartments, and may have reference to the cult of Adonis, i.e., of a mystical ascension to heaven. Sometimes these ladders have been identified as musical instruments, wrongly, Déonna thinks. Later, the ladder occurs with a similar significance in the cult of Mithras; modern psychologists are inclined to attach a sexual significance to this. From this, the ladder may signify the rise or fall in the fortunes of man, and so figures among the attributes of Tyche—and this meaning is kept in Christian symbolism, the ladder testifying to man's ascent to a higher spiritual level. Mahomet is said to mount to the seventh heaven by a ladder of light, and the same thing occurs in Buddhism. It is also found in Masonry. The serpents on the Delian ladders typify the dangers and temptations that beset man in his ascent to a higher level; similar beliefs are to be found in Christian writings and early Christian art.

The second part of the article (pp. 421-490; pl. XXVII) is devoted to the publication of a relief, found in Delos in the excavation of the "sanctuary of the foreign gods." It was found near the theatre of Atargatis, and belongs either in the end of the second century B.C., or the beginning of the first, as it must, in all probability, antedate 69 B.C. It was previously described, though not published, in *B.C.H.* vi, 1882, p. 309, no. 17, and shows two young men on either side of an altar. The one at the right holds a mason's level, shaped like the letter A, and is dressed like an artisan. The one at the left is similarly clad, and seems to hold a hammer in his right hand, and a chisel in his left. They are thought of as putting the finishing touches on dressing the stone of the altar and ascertaining its true level.

The publication of this relief leads Déonna to bring together a list of monuments of different periods, in which tools of trades are represented. They are above all frequent on funerary monu-

ments, but are rarely found till the Hellenistic and Graeco-Roman periods, when they are found largely in Asia Minor. The mason's level in the A form does not appear in Greece, except in this relief; but representations of tools abound on reliefs found in Italy and in the Roman provinces, and among these this type of level is most common. A list of 119 such reliefs is then given, 62 of which have the level; of these nos. 1-16 are from Italy; 17-42 from Gaul; 43-46 from Germany; 47-49 from various Roman provinces; 50-57, early Christian funerary monuments; 58, an ex-voto in Carthage; 59-62, other representations. The following examples do not have the level; 63-73, from Italy; 74-77, from Gaul; 78, from Helvetia; 79-92 *bis*, from other Roman provinces; 93-118, from the Christian period; and 119, a gem of unknown provenance. In mediaeval and modern times, tools and measuring instruments are found carved on walls of churches and houses, and on tombstones, in Switzerland, France, and Germany. Most of the examples in Déonna's list cited above are funerary monuments, and often reveal the profession or trade of the deceased, and nearly every trade is represented if the investigation be carried far enough. Sometimes the representation of the tools is confirmed by an inscription naming the trade, but not always; nor, in those cases where it is missing, may we assume that the tools symbolize the trade; as sometimes the tools are associated with an inscription naming an entirely different profession, as for instance, they appear quite frequently on the tombs of soldiers. They are also found on the tombstones of women, whose husbands belonged to entirely different professions; while mothers put them on the tombstones of their daughters. It is therefore suggested by Déonna that in these cases the presence of the tools denoted the labor involved in erecting the stone.

The "A" level is often associated with hammer or trowel, the wheel with the measuring-rule or compass, the sickle with hammer, chisel, and trowel; sometimes in the Christian period, animals, figures, and holy symbols are associated with tools. All this would indicate that the "A" level and other tools can have a symbolic meaning. This is shown by a mosaic from Pompeii, representing a skull, surmounted by an "A" level, and resting on a wheel. Here the skull typifies death; the wheel, the instability of fate, and the level the equality of all before death. A similar scene with a similar meaning appears on a medallion of

Roman times, showing a skeleton seated on an amphora, his feet on a wheel, a cornucopia in his hand, and the level above his head. This form of level is used as a talisman or amulet, for similar reasons, in Egypt and North Africa. Figures carrying this level have been identified with deities of the cult of the dead, to symbolize the equality of all mankind at death; it is also connected with the fertility cult, where it is associated with the cornucopia.

It is to be noted that the "A" level has precisely the same symbolism in Renaissance and modern art; as an illustration, Déonna gives a modern statue group of Liberty, Equality and Fraternity; three heroic female figures typify the national motto of France, of which Liberty holds the shattered chains of slavery; Equality the "A" level, while Fraternity holds the hands of both.

The carpenter's square, in the form of a right angle, also holds a symbolic meaning. Used as an amulet in Egypt, it is found often associated with representations of stars and planets in Classical times, and appears in early Christian iconography as well; in modern folklore it has a talismanic meaning. The square and the level are often grouped together, and one not infrequently finds on tombs in Gaul the meaningless combination of the letters A, L, and T, where A stands for the level, L for the square, and T for the mallet.

The ruler is also frequently found on Roman and Early Christian funerary reliefs; in the Roman reliefs Déonna believes it to be the symbol of Nemesis. The compass is also frequently found, but principally in Christian art, and then often associated with the balance. This latter measure of weight appears in very early times; in Mycenaean tombs, little balances made of gold have been found; the weighing of souls and destinies is mentioned in Homer, and representations appear on reliefs, vases, and other Greek works of art. It persists in Christian symbolism, and is today the common attribute of Justice.

Returning now to the Delian relief, the youth with the level is associated with another, who holds a stonecutter's hammer and chisel. This same association of tools is found in Roman and Early Christian funerary reliefs. Some examples of this are illustrated. Déonna considers that these suggest the labor of setting up the tomb, rather than the actual profession of the deceased. Only one monument, however, can be associated with the Delian relief, as showing artisans ac-

tually using their tools; this is the altar set up by Sextus Herennius, dating in the middle of the first century B.C., where two men are represented, one with a hammer and chisel, the other with a plumb-line. These men appear to be trimming and "trueing" the monument on which they are shown, just as at Delos. Déonna believes that in neither case are these figures necessarily artisans. He quotes Roussel as suggesting that the Delian relief may be an ex-voto to some Egyptian deity, perhaps Isis. But it is pointed out that it might also be an ex-voto in a Syrian cult, or even an Italic. Another relief from Delos is then published, found in the Agora of the Italians, showing two dancing figures on either side of an altar. The form of this altar is the same as in the relief of the artisans; the figures are clothed in the same way. It has been suggested for this second relief that the figures represent the Lares. It is improbable, owing to the strict prohibition of death at Delos, and the obligation to bury the dead at Rheneia, that the artisan relief is a funerary monument; but monuments to commemorate deceased buried at Rheneia were occasionally set up at Delos, and our relief may have this significance, especially in view of the representation of tools, found elsewhere only on funerary reliefs. This also suggests that the relief is of Roman origin, as such representations occur almost never in Greece. Finally, it is suggested that the two figures are not artisans, but divinities, perhaps the Dioscuri with the attributes of the Cabiri, who are often represented carrying tools, and who are also closely allied to the Lares and Penates, and who figure on coins of the neighboring island of Syra.

### SCULPTURE

**The Original Characteristics of Greek Statuary.**—The articles by W. DÉONNA in *L'Acropole*, Nos. 23 and 24, 1931, pp. 161-193 and 241-277, are largely a critique of the theories on Egyptian art advanced by its celebrated champion, Jean Capart, in his *Propos sur l'Art Égyptien*, 1931, and *Leçons sur l'Art Égyptien*, 1920, rev. 1924 (cf. *Lectures on Egyptian Art*, 1928). Contrast must be drawn between statuary, largely formalistic and religious, and figurines which are of the most freely handled and varied types, and which belong, moreover, to industrial art; and conclusions drawn from the latter must not be used to disparage Greek material which belongs to the former: distinction here does make a difference.

Egypt and Greece, in contrast to the ancient orient and the first centuries of Christendom, are pre-eminently the lands of statuary in the round and of the exaltation of the human form. Greece alone used marble and cast bronze for its large statues, and the use was a Hellenic creation. The Egyptians had employed bronze but only for figurines.

**The New Kouros in the Metropolitan Museum.**—In *Röm. Mitt.*, 47, 1932, pp. 193-201, MAX WEGNER comes to the conclusion that the "kouros" in the Metropolitan Museum is not an archaic statue but a modern forgery. Comparing it in proportion, symmetry, and artistic treatment of the various parts of the body to the Sunion kouros and Dipylon head, he points out that in the archaic works the artist portrays every detail with complete reality and individuality, whereas the artist of the Metropolitan statue is trying to achieve the general effect of the archaic statue. Certain specific details, as, for instance, the fact that the Metropolitan figure wears an unusual necklace and that its hands do not lie close against its thighs, confirm the author's conclusion.

**A Portrait of Ptolemy III Euergetes.**—A very small, glazed earthenware head, found on a hospital site in London and now in the British Museum, is identified as Egyptian by the material, as representing a Ptolemy by the diadem which confines the hair, and specifically, by comparison of the fleshy features and prominent eyes with coin types, as Euergetes. The back of the head is hollowed and cut off obliquely, as if to be attached to a background, with a slight turn to the right. In spite of its diminutive size (32 mm. high) the head has an iconographic interest, since only one other portrait of this monarch, a marble bust in Alexandria, is definitely known. A similar miniature head from Naucratis, also in the British Museum, is identified as Arsinoë II. R. P. HINKS, *J.H.S.* liii, 1933, pt. 2, p. 300; fig.

**Sarcophagi from Xanthus.**—The fragments of four marble sarcophagi of the Roman imperial epoch, which were found by Sir Charles Fellows in 1838-39 in a mausoleum at Xanthus and given by him to the British Museum, are adequately published for the first time and discussed by G. RODENWALDT in *J.H.S.* liii, 1933, pp. 181-213; 6 pls., 17 figs. Two of them, of Attic origin, once stood on plinths against the side walls of the square chamber and have the backs and the ends farthest from the entrance less carefully finished than the two more exposed sides. One of them has



reliefs of small boys playing with hoops and balls and riding to the hunt, all of which exercises were actually used by older persons. The hoop and ball motives are new in this connection and seem to lack the funeral symbolism of the more usual subjects on sarcophagi with Eros. The other one has battle scenes on front and ends and a pair of gryphons on the back. Both are of familiar types and can be interpreted by other, better-preserved examples. The battle sarcophagus, with its crowded figures on foot and on horse, belongs to a small group of Attic works which do not show the Persian or Gaulish opponents of classical and Hellenistic combat-scenes, and must, therefore, be considered mythological. The cover of this chest is of the couch type, that of the sarcophagus with Eros is a gable roof. The other two sarcophagi stood without plinths, one on the raised stone floor of a rectangular recess opposite the entrance, the other on the main floor in front of the recess. These are both of the Asia Minor type, fully finished and meant to be seen on all four sides. The one which occupies the place of honor has hunting scenes, the other one a columnar design, with six columns on the long sides and four on the short sides, counting the corner ones twice. It has a traditional feature of this type in the simulated door, as of a house or tomb, with incense-burner in front, on one of the short sides. On the other end are three female figures standing between the columns, and on the long sides the standing figures, of which only the feet and lower parts are preserved, may be the Dioskouri, Odysseus and Diomedes, or similar subjects. A slight difference in the level of the standing figures in the two halves may be due to a division of the work between two sculptors. The hunting sarcophagus is marked by a deeply-cut double band of ornament around the base. The very scanty remains of the sides can be placed and filled out by the analogy of a completely preserved companion piece at Adalia. There are Victories at the four corners, and between them, on both the long sides, the master of the hunt, mounted, and his attendants on foot, with dogs, fighting panthers, lions, wild boars and Carian humped oxen, but the various groups are not all on the same level, for by the principle of vertical perspective, the more distant figures are shown in the same size as the nearer ones and above them, a device perhaps originating in the textile art. One well-preserved head is distinctly in the Greek tradition. To judge by several other known sarcophagi from the same Asia

Minor workshop, the covers of these last two were gable roofs with acroteria at the corners. All four pieces may be dated in the last quarter of the second century A.D.

#### VASES

**A New Black-figured Anthesteriac Vase.**—In *Bull. de la Soc. Roy. des Lettres de Lund*, 1932-33, pp. 44-48, MARTIN P. NILSSON publishes a black-figured vase belonging to a group which Frickenhaus and Deubner interpret as bearing a representation of the rites of the Lenaea. Nilsson, however, sees in the painting a representation of the rites of the Choes, or second day of the Anthesteria. The portrayal of the blessing of the wine, which Nilsson considers the important theme, cannot be assigned to the Lenaea, for wine was not, as is sometimes supposed, used to produce the ecstasy of this orgiastic festival. Moreover, the mask god here represented, about whom the dancers revel, is not the god of the orgies, but the protector of the vine, the god of the Choes.

**Zeus with the Scales of Fate.**—In the *Bull. de la Soc. Roy. des Lettres de Lund*, 1932-33, pp. 29-43, MARTIN P. NILSSON discusses the significance of the painting on a black-figured vase found at Enkomi: Two men are represented in a chariot, and a third stands before them holding scales. Rejecting E. Sjöquist's suggestion that this represents a "judgment of the dead," Nilsson labels this scene "Zeus with the scales of fate," citing a series of quotations from Homer to show that to Homer's age the idea of Zeus manipulating the scales of fate was a familiar one and therefore an old one, doubtless dating from Mycenaean times. If this interpretation is correct, Homeric and Mycenaean fatalistic beliefs are shown to be very similar, and Zeus, who holds the scales of fate, is the king of the gods in the Mycenaean period as he is in the Homeric.

#### INSCRIPTIONS

**Greek Epigraphy in 1931 and 1932.**—M. N. Tod's biennial summary of discoveries and discussions of Greek inscriptions, with more than 700 references to books and articles by scholars of many nations, is published in *J.H.S.* liii, 1933, pt. 2 (pp. 214-266). He notes that nine of the most eminent European workers in this field have died during the period covered. A useful new bibliography, published in *Historia*, is the *Rassegna di Epigrafia*, with Greek and Roman sections. New parts have appeared of the *editio minor* of *Inscrip-*



*tiones Graecae* and of the *Supplementum Epigraphicum Graecum*, and a new edition of Kaibel's *Epigrammata Graeca* is in preparation. Inscriptions form the basis of many publications on the Greek language and alphabet, on Greek history, politics, religion, vase-painting, etc., as well as for various theories as to Phrygian, Phoenician, Hittite, Minoan, and other allied languages and alphabets. Recent books and articles about inscriptions are here listed and to some extent discussed, under geographical headings: Attica (11 pp.); Peloponnesus; Central and Northern Greece; Macedonia, Thrace and Scythia; Islands of the Aegean; Western Europe; Asia Minor; Syria and Palestine, Africa.

**An Inscription from Eleusis.**—In *R. Ét. Anc.* xxxv, 1933, pp. 195–212, R. VALLOIS discusses an inscription found not far from the *hieron* of Eleusis by Kourouniotis and published by him in the first volume of his *Eleusiniaka*, pp. 173–189 (1932). It forms a part of a decree, reforming the administration of the sanctuary and its succursal shrines in Athens and Phalerum. In connection with that in Athens the architect Coroe bus, the first of the three architects of the Telesterion at Eleusis (Plutarch, *Pericles*, xiii), is mentioned. According to Kourouniotis the demos votes to restore the three sanctuaries; determines the funds to be devoted to this; creates a board of magistrates (*epistatae*) charged with the duty of overseeing the works and administering the funds under the direction of the *hieropoioi*, and it also indicates under what conditions the expenditures are to be made in the separate places. These *epistatae* are compared to the "*epistatae* of the works on the acropolis." The Greek archaeologist, on the basis of the three-barred sigma, fixes upon 440 B.C. as the lowest possible date, and, on the basis of what he supposes is a reference to the works of the Parthenon and the statue of Athena Parthenos (in ll. 11–12), upon the year 446 as the earliest possible date. Vallois thinks that this form of sigma makes 446/5 the lower date, and moves back the other date to 452, for he feels sure that the reference is not to the Parthenon and to the statue of Parthenos, but to the old temple of Athena Polias and to the statue of Athena Promachos, and regards this as a proof that not simply the Opisthodomos had been restored (as Dinsmoor thinks) but the whole cella. In fact he regards 448/7 as the latest possible date, for, a year later, the *epistatae* would have had to be more exactly designated in order to distinguish

them from those of the Parthenon. The forms of N B P, and Φ indicate a date later than 452/1, he thinks, and discusses the forms of some of these letters in the more or less complete series of eight decrees in *I.G.* 1<sup>2</sup>, 335, which he dates from 452/1–445/4. We learn in the inscription of the creation of a college of *epistatae*, composed of five members, one of whom is to be chosen (*κατὰ φσέφον*) as secretary; of their compensation; of their duties; and of the method of renewing the board. They are not to be in charge of the works, as was the case with the *ἐπιστάται ἐπὶ τοῖς ἐμ πόλει ἔργοις*, but in charge of the money (*ἐπὶ τοῖς χρήμασι*). They were to make reports upon the moneys due to the goddesses, and were to recover these debts; they were to exercise a control on the annual revenues, but were not to make payments, for these were dealt with in the article that follows this amendment, telling of the duties of the *logistae*, who were to function separately in the three shrines mentioned above, keeping strict account of the sums expended (*ἀνελομένα-ἀνηλωμένα*) and acting in concert with the priests and the *boulé* (*μετὰ τῶν ἱερέων καὶ τῆς βουλῆς*). The words *ἀρχισαμένος ἑκτε[ς] ἡ[αυτῶν] ἄ[ν]οθεν*, Vallois thinks, indicate that the board had been created or organized ten or fifteen years earlier. Coroe bus and Lysanias, it is to be noted, were to be consulted only in connection with the Eleusinion in Athens, where alone, apparently, works of construction were then going on. The ruined temple at Phalerum was probably never restored. After discussing *I.G.* P, 336, which Noack thinks refers to the Telesterion at Eleusis but which our author feels certain may quite possibly refer to that at Athens or Phalerum, he concludes with the statement that epigraphical documents, up to the present, at any rate, cast no direct light on the chronology of the Telesterion of Pericles, except that it was constructed after 452 B.C. and that the career of Coroe bus began before 450 B.C.

**The Will of Ptolemy the Younger.**—In *Sitzungsber. preuss. Akad. Wiss.*, 1932, pp. 317–336, ULRICH WILCKEN treats of the will and testament of King Ptolemy the Younger of Cyrene (later Euergetes II of Egypt, called Physkon) drawn up in the year 155 B.C. or, as the inscription itself puts it, "in the fifteenth year of his reign, in the month Loos," which, as Wilcken shows, fell in the year 155, not 156, as Oliverio reckoned it. The will is recorded on a marble stele found by the Italians in 1929 on the Piazzale della Fonte di

Apollo in Cyrene in the course of their excavations. It bequeaths his realm in Cyrenaica to the Roman people in case, at the time of his death, he shall have left no heir to his throne. Apart from an obscure reference in Ammianus Marcellinus in the fourth century A.D. (XXII, 16, 24) the existence of such a will had hardly been suspected because of the fact that Ptolemy did leave his throne to his son Ptolemy Apion. The stele was first published by Gaspare Oliverio as the first fascicle of the volume dedicated to the memory of Federico Halbherr (84 pp.), and is accompanied by a very full commentary which discusses Ptolemy's relations with his brother Ptolemy, the Elder (called Philometor), his bitter enemy (cf. Polybius, XXXIII, 11, where Ptolemy accuses his brother, before the Roman senate, of conspiring against him, and XXXI, 20, 3, where the senate is represented as siding with the younger as against the older brother). This, Wilcken thinks, happened in 154, when Ptolemy had gone in person to Rome to plead his case against his brother. In the will which states, near the beginning, that a copy (*τὰ ἀντίγραφα*) has been sent to Rome, Ptolemy expresses the wish that he may worthily requite those who have plotted not only against his kingdom but also against his life, and states that if anything happens to him (*ἐὰν δὲ τι συμβαίῃ τῶν κατ' ἀνθρώπων*) before he leaves any heirs to his throne, he leaves his kingdom to the Romans whose faithful ally he claims always to have been. He then invokes their aid in case his realm is attacked and calls to witness Jupiter Capitolinus, the Great Gods (Castor and Pollux, as Wilcken interprets it), the Sun, and Apollo Archegetes, to whose keeping a copy of the will is entrusted (*παρ' ᾧ καὶ τὰ περὶ τούτων ἀνέρωται γράμματα*). This bequeathing of a kingdom to the Romans is peculiarly interesting as antedating by some twenty-two years the similar gift of Antiochus II of Pergamon. Wilcken supposes that the occasion for this gesture was the king's intention to attempt to recover Cyprus, which had, he felt, been wrongfully given to his brother, and his desire to obtain the Romans' help in this attempt. Wilcken argues that the copy of the document sent to Rome was naturally to be kept sealed and secret, though its contents were to be made known by the bearers, and that this must also have applied to the copy deposited in the temple of Apollo, and that the will was made public by this stele much later, perhaps by his son Apion in 116 B.C., or still later by the Romans

in 96 B.C. when by the death of Apion, they were made heirs to the kingdom of Cyrenaica.

**An Inscription from Pergamon.**—In *Sitzungsber. preuss. Akad. Wiss.*, 1933, pp. 408–415, RUDOLF HERZOG discusses an inscription found in the course of the German excavations carried on by Wiegand in Pergamon during the years 1928–1932, and turned over by him to Wilhelm Weber for emendation, explanation, and historic evaluation. Herzog is convinced that the inscription emanated not from the Roman government but from Seleucia; that it has nothing to do with the bringing back to Rome of Trajan's dead body; and that it refers not to C. Antius A. Julius Quadratus but to C. Julius Quadratus Bassus, who is known to us chiefly from Pliny's letters (IV, 9; V, 20, 1; VI, 29, 10; *ad Traj.* 56, 57). The later receipt of a squeeze of the inscription enables Herzog to offer a more complete emended transcription of the two faces of the stone, with a commentary on many of the statements therein recorded. The two sides of the stone were inscribed at different dates, for B is more sharply cut and shows more ligatures than A. In it (l. 4) Hadrian is spoken of as living, while in B (l. 36) he is referred to as Divus (or at least as "divinely honored," which would indicate a later date). The condition of the stone indicates that B was inscribed after a split had come about in the surface of the stone. A, he thinks, was inscribed after the close of Trajan's second Dacian war (ca. 107), and B was probably added later than 138. Herzog shows that the various offices and posts listed in the inscription agree rather with what is known of C. Julius Quadratus Bassus than with our knowledge of C. Antius A. Julius Quadratus.

**Grave-Inscriptions.**—In *Sitzungsber. preuss. Akad. Wiss.*, 1932, pp. 792–865, ADOLF WILHELM discusses a number of well-known Greek grave-inscriptions from Asia Minor, and proposes a large number of emendations of these. Among them are:

(a) The twenty-line hexameter poem from the grave of the Presbyter Nestor (fourth century A.D.) from Dineh-Saray in Isauria, published many years ago by W. M. Ramsay, the first line of which reads

—τίς; —[?Ω ξ]έν', ἐγὼ παρίοντι, φ[ιλήκ]οε, χαῖρε,  
[λέγω].

Among other corrections, Wilhelm calls attention to the danger of turning misread groups of words into proper names, as, for instance, τῇδε φίλην into Τηλεφίδην.

(b) A number of inscriptions which begin with vocatives of persons addressed and with interrogative words, as in the line quoted above. Wilhelm here refers to articles by Florence Gragg (*Proceedings of the American Academy of Arts and Sciences*, xlv, p. 13); D. M. Robinson (*Anatolian Studies*, p. 341) and U. von Wilamowitz (*Ath. Mitt.* xlv, p. 157). Wilhelm corrects Anderson's reading of an inscription from Kuyulu Zebir Köy (*J.H.S.* xix, p. 287, n. 185) to read Σῆμα τόδ' ἀτρῆς (= ἀθρείς) ἔν' ἐίσῃ, τίνα τύνβος ἐρύκει instead of Σῆμα τόδ' ἀτρῆς, ἔν' ἐίσῃ τίνα τύνβος ἐρύκει (ἐρύκει), which seems to mean "if the tomb can justly be said to hold *anyone* within it" (perhaps ἐν αἰσῃ).

(c) A full commentary on the poems from the grave of Aurelios Trophimos and his family (Calder, *Bulletin of the John Rylands Library, Manchester*, xiii, 260 ff.). Wilhelm thinks that Calder's theory of a daughter (Ammia) who commits suicide because her parents will not permit her to become a nun rather than marry the man of their choice is not proven by the words of the inscription. Οἷστρος Θανάτοιο (cf. Euripides, *Herakles*, 1144) does not necessarily indicate that her desire to die resulted in suicide.

(d) The inscription from Suverek, near Laodicea Katakekaumene (*Bulletin of the John Rylands Library, Manchester*, viii, 1924, pp. 358 ff.) does not, according to Wilhelm, prove that Gennadios died a martyr's death, but simply that he suffered persecution and died before his time (μυνη-θάδιος δ' ἐτελεύτα).

(e) In the words τὸν θεόν σοι μὴ ἀδικήσῃς which occur frequently in Christian inscriptions, often as a later addition, Wilhelm thinks σοι should not be interpreted as σύ, construed as subject of ἀδικήσῃς, but that the first three words should be interpreted as an adjuration, "In the name of thy God, thou shalt not wrong me" or "my tomb" (of the person buried in the grave).

### COINS

**Forgers of Greek Coins.**—In *Rev. Numismatique*, 36, 1933, pp. 1-41, O. RAVEL has made a study of the work of modern coin-forgers. Their cleverness, and their limitations by which their work is often detected are carefully analyzed. He has studied the effects of certain oxides upon the surface of silver which prove the authenticity of a coin, and other surface marks which prove the opposite. He makes observation of chemical changes in a coin of as much or more importance than considerations of style. The article is il-

lustrated by several valuable plates which show coins authentic and false, some enlarged several diameters to make the details clear.

**On the Coins of Catana.**—In *Röm. Mitt.* 48, 1933, pp. 121-126, WILLY SCHWABACHER assigns the Nike-Amenanos type of coins of Catana to the period from 461 to 450 B.C., by marking the similarity between the Nike figure on these coins to the figure on coins of Elis of 452 B.C. and to other feminine figures in works of art of the middle of the fifth century B.C. The Apollo-quadrige type he assigns to about 450, by comparison of it with coins of Leontini, thus leaving the decade before empty of all coinage except the Nike-Amenanos type, which again logically falls into that period.

### ITALY

#### GENERAL AND MISCELLANEOUS

**Chariot Bronzes.**—E. VON MERCKLIN deals with bronzes used as decoration for chariots in the Roman imperial period. He catalogues and illustrates the two chief groups: 81 bronzes found in Bulgaria and now in the Hermitage in Leningrad, which apparently belong to the second century; and a smaller group, said to have been found in Nicomedia, which came with the Carpanos collection to the National Museum at Athens and seems to include pieces scattered over a considerable period in the third and fourth centuries. A great many isolated specimens are discussed also. The position on the chariot of many of the bronzes is uncertain, and no complete reconstruction is possible; that in the Athens museum is shown but not indorsed. Some ornaments, including those for the end of the pole, the end of the axle, and the hub are identified. *Jb. Arch.* I. xlviii, 1933, pp. 84-176; 104 ills.

**A Roman Mosaic.**—In *Röm. Mitt.* 48, 1933, pp. 312-317, R. HERBIG takes up a Roman mosaic in the Vienna Kunsthistorisches Museum which represents two women before a small tripod, the one with pipes, the other carrying a pitcher and a large grasshopper. Obviously, we have here to do with the worship of a deity as averter of a grasshopper plague, Apollo, or Heracles Parnopios. The composition of the mosaic, the turned heads of the figures who are not looking toward the tripod or at the objects they hold, and the question as to what sacrifice or rite can here be represented with the large grasshopper and the small tripod, all lead the writer to suspect that the work is not ancient. Moreover, he finds the

actual figures from which these have been copied and inappropriately placed in the mosaic. They are figures in the mural decoration of the Cestius pyramid in Rome.

### ARCHITECTURE

**Underground Chambers in the Villa of Livia at Prima Porta.**—In *Röm. Mitt.* 47, 1932, pp. 174–192, HEINRICH SULZE studies the underground chambers of the Villa of Livia at Prima Porta which were excavated in 1863 but which are no longer completely visible and of which no plan has been preserved. The following facts, however, can be ascertained: In the last half of the first century B.C., steps and a large room were built on to the cellar of a building of the Republican period, and the walls of this room were decorated with garden paintings. Before 60 A.D. a room was built above this underground chamber which necessitated filling it up with earth, and thus it was preserved intact until the time of excavation. A canal apparently led from a cistern to the chamber, and the walls of the chamber were hollow. This room probably originally contained a fountain and was a place to which people retired from the garden when the day became too hot.

**The Monument of Augustus at La Turbie.**—In *R. Ét. Anc.* xxxv, 1933, pp. 165–168 (3 pls.; 2 figs.), FERNANDEZ GIMENEZ describes in some detail the monument of Augustus at La Turbie, near Monaco. The substructure of this tower has lately been laid bare by the removal of masses of masonry, added partly as military works in the sixteenth century and partly as supporting buttresses after the earthquake of 1886. The base consists of a platform of about 38 meters square and 2 meters high, which is approached on all sides by two steps. On this foundation rises a pedestal of 20 meters in height, which consists first of a plinth 27 meters square and 4 meters high and, secondly, of a cylindrical part 20 meters in diameter. Only the core of this and a part of its cornice remain. This cylinder rises from the surface of the lower platform and is, therefore, surrounded by the 4-meter high plinth. From the core rises a prolongation of the cylinder with a circular colonnade formed of smooth columns 9 meters high, surmounted by Doric capitals. Only two of these remain with the entablature which surmounted them. According to my measurements there must have been 16 of these. Inside this colonnade and rising some meters above it is a ruined tower whose masonry differs completely

from the authentically Roman parts of the monument in its freshness and its nature. This is undoubtedly the work of the military engineers of the sixteenth century. Gimenez, calling attention to the different marble of which the lower part of the cylindrical structure is made with its large stones joined together without cement, concludes that this lower part is several centuries older than the final tower as finished by Augustus.

**A Roman Aqueduct at Vicovaro.**—In *Röm. Mitt.* 47, 1932, pp. 170–173, EBERHARD EGE describes a Roman aqueduct dug into the rock in the garden of the monastery of S. Cosimato at Vicovaro, probably part of the Aqua Claudia. The earlier channels are dug in straight lines near the edge of the cliff; the later channels are dug further into the cliff in tortuous curves obviously intended to follow the more solid parts of the travertine. Outside the aqueduct but connected with it is a waterfall for emptying the water into an older aqueduct which is 10 meters deeper. The walls of the waterfall are lined in three-cornered bricks (Claudian?), and the falls are shut off by three locks.

### SCULPTURE

**A Robed Female Statue.**—In *Röm. Mitt.* 48, 1933, pp. 318–321, RUDOLF HORN publishes a headless, robed female statue in marble, listed in the auction catalogue of the Galleria Giardiello in Florence. It is of Roman workmanship, but the heavy chiton with its deep folds, the peculiar treatment of the mantle, and the bearing of the figure all point to an original of the second century B.C.

**The Venus Genetrix of Arcesilaus.**—MARGARETE BIEBER, in *Röm. Mitt.* 48, 1933, pp. 245–261, considers a series of statuettes of Venus which she identifies as small replicas of the cult statue of Venus Genetrix executed by Arcesilaus and set up in the temple dedicated by Caesar in 46 B.C. They are six in all: one from a private collection in Fulda, three in the Louvre, a fifth belonging to Dr. Brendel of Erlangen, and a sixth bought from a dealer in Rome and now in a private collection. All of the statuettes are similar in that each has a small Amor on its left shoulder, its left hand on its knee, its right clasping its mother's hair. All are similar also in the slight turn of the mother's head toward the child, the arrangement of the garment, the proportions of the body, the full breasts and narrow waist, rounded belly, wide hips and long limbs. The



right hand, where preserved, holds a garland of flowers. In the treatment of folds and shape of head and face they differ somewhat. Moreover, the sixth statue, bought in Rome, has in addition to the Amor a somewhat older child standing at the goddess' left; her left hand clasps his, whereas in the other statuettes this child is missing and the left hand is variously treated. This older child is identified by the writer as Iulus, through whom Caesar traced his ancestry to Venus. Because of the smallness of the statuettes, it is natural that they should not all reproduce him. The mantle which hangs from the left shoulder is gathered up and looped over the left arm, and what is especially noteworthy is that the hem of the mantle is looped up (not merely the upper part of it), a characteristic of Hellenistic Roman statues. The statuette is obviously a reproduction of a statue of the latter part of the republic. The treatment of the head, too, bears this out.

The type of statue which Weickert believes to be the Venus Genetrix of Arcesilaus, the writer considers an older type, that of the Venus of the temple near the Circus Maximus, or that of Erycina near the Porta Collina. The other Venus type commonly identified as Caesar's Venus Genetrix, shown best in the Louvre statue No. 525, the writer classifies as a classical Augustan creation on the basis of a Greek work of the fifth century with some admixture of the characteristics of the fourth century. Since the type first appears on coins of Sabina and Faustina, it probably represents a statue of a temple built by Augustus and rebuilt by Hadrian, perhaps the temple of Mars. The type of the six statuettes studied in this article stands halfway between the other two and is thus an interesting example of Hellenistic Roman art.

**Roman Iconography.**—In *Röm. Mitt.* 47, 1932, pp. 202–268, LUDWIG CURTIUS discusses the portraits of three Romans:

I. L. Cornelius Sulla. The author identifies a head in the Museo-Archeologico in Venice (Arndt-Amelung 2564) as Sulla. It is an exact likeness of the portrait of Sulla appearing on coins of his grandson, Q. Pompeius Rufus, in 57 B.C.

II. C. Julius Caesar. The writer seeks to ascertain what place the marble head in the possession of Countess Luxburg in Munich occupies in the portrait series of Caesar. His point of departure is the portrait of Campo Santo in Pisa which he classifies as an Augustan type. With this type he compares a bust in the Torlonia collection, and,

after a consideration of coin portraits and gems, he comes to the conclusion that the Torlonia type belongs to the early Augustan period, the Luxburg head to the later Augustan period, which saw the completion of the development of classicism in portraiture, and the Campo Santo type stands between the two.

III. M. Aemilius Lepidus. The author recognizes as Lepidus: (1) the togate figure in a group of statues from the Basilica of Velleia in the Palazzo Farnese in Parma, apparently representing a whole dynasty, among whom Claudius and Otho can also be identified; (2) a bronze bust from Herculaneum representing Lepidus in his early forties as can be shown by comparison with a coin portrait of 43/42; (3) a colossal head in the Glyptothek Ny Carlsberg representing him as an old man; (4) the Pontifex Maximus of the Ara Pacis.

In *Röm. Mitt.* 48, 1933, pp. 183–243, he continues his treatise begun in v. 47, with a discussion of the portraits of the following:

IV. Cleopatra VII. The author identifies the head of statue 567 in the Sala di forma di Croce Grece of the Vatican as Cleopatra, by comparing it to coin portraits. It is probably a copy of the statue of her which Caesar placed in the temple of Venus Genetrix. She may have been represented as Aphrodite with Caesarion as Eros.

V. M. Vipsanius Agrippa. Curtius publishes a gem of a private collection in Rome which portrays Agrippa in his youth. For identification his point of departure is the Agrippa of the Louvre which he dates about 27 B.C. The statues of Copenhagen, Pisa, and Toulouse are replicas of this type. The Venice Agrippa falls somewhat later. The Butrinto head is youthful and falls between 40 and 36 B.C. The Agrippa of the Six collection is an Augustan idealized portrait made after Agrippa's death. The colossal Agrippa found near the Pantheon is older than the Paris statue. In closing, the author gives a list of statues and figures in reliefs which have at some time or other been falsely identified as Agrippa.

**Youthful Portrait of Augustus.**—J. SIEVEKING, in *Röm. Mitt.* 48, 1933, pp. 299–303, discusses the famous head of Augustus in the Sala dei Busti of the Vatican. He points out that its origin is by no means satisfactorily established, and objects to using the Ostia origin of the bust in support of a judgment of its style, as do Studniczka and Amelung, who assign the work to the age of Hadrian.



The author agrees with Wickhoff and Brendel in considering this head "the purest Augustan style of portraiture." He, however, differs from them in that he believes that this statue is a reproduction of a bronze original. He agrees with Brendel that the portrait is not one of Augustus as a boy but is a portrait of him in later life. In the London copy of the Castellani collection which is superficially of the same type he sees a modern reproduction.

**The Iconography of Germanicus.**—In *Röm. Mitt.* 47, 1932, pp. 153-169, RANUCCIO BIANCHI BANDINELLI rejects the three types of portraits formerly used as criteria for the iconography of Germanicus because of insufficient evidence that they really represent him. Bandinelli's starting point is an Olbia statue in the National Museum of Cagliari, and he lists seven statues of this type, using for identification portraits of Germanicus on coins of Caligula, and a silver drachma of Cappadocia. He also adds to the list a head found on the Palatine and now in the National Museum at Rome. The eight replicas he mentions fall into three types: (1) A youthful type represented by the Palatine head, (2) the Olbia type, (3) a type probably Hellenic, represented by a Corinthian statue and a statue in the Louvre.

**Male Portrait Head of Delphi.**—In *Röm. Mitt.* 48, 1933, pp. 304-308, SIEVEKING once more considers a marble head from Delphi (*Fouilles de Delphes*, iv, 73), which he already formerly dealt with in objecting to Studniczka's attempt to connect it with the so-called Brutus of the Conservatori palace. He compares it with various works of the Claudian period, especially the bronze *camillus* statue of the Metropolitan Museum and the "Fauno colla macchia" of the Munich Glyptothek. All three statues are alike in the combination of the naturalness in the representation of the hair and the strongly contrasting expressionlessness of the face. In the Delphic head this lack of expression is such that it is useless to endeavor to ascertain the character of the person represented.

**Florentine Columns with Armor-relief and the Armilustrum.**—In *Röm. Mitt.* 48, 1933, pp. 1-119, JAN WILLEM CROUS studies two marble columns in the Uffizi Gallery decorated on all sides with reliefs of Roman armor. They are of Flavian workmanship and came to Florence originally from the monastery of St. Sabina on the Aventine in Rome. The author seeks to ascertain to what building they belonged. This must be (1) a struc-

ture on the Aventine within the district belonging to St. Sabina in the fifteenth and sixteenth centuries, (2) a richly decorated edifice whose architecture admitted of lofty pillars exposed on four sides, hence probably forming a portico, (3) a building in which originally armor was hung. The building which fills all these qualifications is the Armilustrum, which Crous, by detailed consideration of literary evidence, establishes as having been located on the northwest corner of the Aventine. These columns, no doubt, formed part of a Flavian addition or restoration of the temple. A catalogue of types and an analytical description is appended.

**A Portrait of Antoninus Pius?**—FR. V. LORENTZ, in *Röm. Mitt.* 48, 1933, pp. 308-311, attempts to identify conclusively the bearded head in the Berlin Museum which Blümel has shown to belong to the relief of the Hercules sacrifice on the arch of Constantine. Blümel believed it to be Antoninus Pius, but v. Lorentz, upon comparing it with established portraits of the emperor and with the bearded, togate figure of the large Ephesus relief which he identifies as Antoninus Pius, disagrees. He concludes that the figure is not Antoninus, and that therefore one cannot from the presence of this figure discover a *terminus post quem* for the relief.

## INSCRIPTIONS

**The Inscription Concerning the Ludi of 204 A.D.**—In *Sitzungsber. preuss. Akad. Wiss.*, 1932, pp. 762-791, ERNST DIEHL writes of the new *Acta ludorum saecularium septimorum* of the year 204 A.D., first reported in the *Notizie degli Scavi*, vii, 1931, fasc. 7-9, pp. 313 ff., pl. X. The new fragments were found in the bend of the Tiber where the Via Paola crosses the Corso Vittorio Emanuele. Here stood in ancient times the Ara Ditis and here in 1890 the fragments of the *Commentaria ludorum saecularium quintorum* and *septimorum* were found, which have since been published by Mommsen and Hülsen. The skillful hand of Ruggeri has succeeded in fixing the order and position of these more than 60 fragments, and Pietro Romanelli is to be credited with much of the restoration and interpretation of the inscription. Careful examination of the content of the fragments shows that it is the continuation of an account of the matrons' worship of Juno Regina on the night of the first-second of June. The new fragments complete the lower part of the stone whose upper fragments were found thirty years

earlier and exclude the possibility of inserting a fragment that Hülsen and Vaglieri had thought might belong here. This is proven by the number of letters in the lines which is fixed by the new fragments, as is also the number of lines in the whole inscription: Part I contained 57 lines; II, 29; III, 91; IV, V, Va and VII, 90 or possibly 92 lines. Every line has at least 160 letters, and toward the end this number is increased to 180 or even more. The inscription is of great interest to students of Roman literature because of its preservation, though in a very fragmentary condition, of a new *Carmen Saeculare* which, as restored by Diehl, begins as follows:

[Sollemnes nunc P(h)oebe, dies, P(h)oebeia,  
noctes  
reddite: Cymaeo signantur s[aecula lib]ro,  
quae docuit virgo vates longaeva Sibylla]

### COINS

**Imperial Coinage of the Severi.**—K. PINK, in *Num. Zeitschr.* 26, 1933, pp. 17-54, makes a study of Roman coinage from Septimius Severus to Macrinus, a period not yet covered by Mattingly and Sydenham, and suggests a method of arranging their complicated coinage that might be followed in arranging the issues of later emperors.

**Coins in Roman Austria.**—G. ELMER has arranged the various Roman coins found on the site of ancient Carnuntum in Lower Austria. He has also made a study of the circulation of money at this place. The coins range from the time of the Republic to Heraclius, and come from Eastern as well as Roman mints. They are now dispersed in various collections.

### AUSTRIA

**Bronze Age Skeletons from Lower Austria and Moravia.**—In *Mit. Anth. Ges. Wien*, lxiv, 1-3, 1934, pp. 1-101, J. SZOMBATHY describes, tabulates, and discusses human skeletal remains from a series of Únětice (Bronze Age I) graves which he finds to represent the following type: medium stature, orthognathous, dolicho- or mesocephalic. This type differs from the Megalithic people of Northwestern Europe in great head height, and from the Southwestern European brachycephals in great head length.

**Tumuli Graves of the Early Roman Empire Period from Maxglan Near Salzburg.**—In *Mit. Anth. Ges. Wien*, lxiv, 1934, pp. 129-146, M. HELL reports the finds from two burial mounds of

the "frühkaiserliche" period, containing pottery, bronzes, iron, and glass, datable to the first and second centuries A.D. The cremated burials were placed in earthen mounds without any stone construction. The author sees a strong Keltic character in the pottery and also a definite relation to La Tène forms. The material is deposited in the City Museum at Salzburg.

**On the History of Settlements in the Lower Hron (Gran) Valley.**—In *Mit. Anth. Ges. Wien*, lxiv, 1934, pp. 147-173, H. MITSCHA-MÄRHEIM and R. PITTIONI publish the important archaeological collection of the Countess Coudenhove of Želiezovce in Slovakia. The material contains Neolithic, Bronze, and Iron Age ceramics, stone and bone artifacts, and certain metal objects. The authors describe the collection chronologically and add a general interpretation on the major phases represented in it.

### RUSSIA

**Anthropological Activities in Soviet Russia.**—In *Amer. Anth.* 35, 2, 1933, pp. 301-327, E. GOLOMSHTOCK presents an account of his observations made during a field trip in 1931. After an introduction which contains an historical sketch, the author describes: Progress in archaeology and anthropology; field work in anthropology; most important scientific results (fossil remains, Palaeolithic statuettes, Aurignacian house pits, the Kolyma mammoth trunk, the Palaeolithic period, Neolithic and subsequent periods); new ideas; opportunities for exchange. The article ends with the following suggestions: that a comprehensive bibliography on Russian works be compiled; that a bureau for interchange of information be established; that the major works be translated; that American institutions cooperate in expeditions, publishing, scholarships; that a special journal for anthropological and archaeological activities in Soviet Russia be established.

### SCANDINAVIA

**The Type of Ship of the Rock-Carving of Kärstad.**—By ARTHUR NORDEN, *Fornvannen*, 1933, pp. 77-83. The new outlook upon the earliest appearance of runic writing in Norway and Sweden, which the discovery of two primitive Nordic inscriptions, in connection with rock-carvings, has opened up, renders it necessary to single out with the utmost acuteness those traits of the images of the rock-carving which permit of the determining of the age of these pictures.

In the two carvings, the Norwegian at Kårstad and the Swedish at Himmelstadlund—the former published in the *Bergen Museum Yearbook*, 1929, the latter in *Archaeological Studies dedicated to H.R.H. Crown Prince Gustaf Adolf*, 1932—drawings of ships enter in as component parts. But while the pictures of the Swedish rock-carving are of a stencil-like Bronze Age type and do not permit of an accurate dating, the Norwegian carving shows a number of ships of a peculiar type. Characteristic of this type is partly the pronounced curvature of the ship's body toward the two ends, partly the forked, markedly prolonged and upturned contour lines of the bulwark, partly, finally, the spheres which terminate the contour of the keel prolonged towards both ends.

Most significant is the forking of bow and stern which produces the effect of horns. This detail is, of course, not without its counterpart in the plentiful carvings of the Bronze Age, but in the particular form which these "horns" receive in the Kårstad-carvings, they seem to belong to the Roman Iron Age. Here we have possibly an opportunity to date the Kårstad Ships fairly accurately. In a Swedish dolmen at Smiss in Eke parish, Gotland, there was a picture of a ship (Fig. 22) on one of the wall slabs. To judge by the contents of the dolmen, it belongs to the period 250-350 A.D. The carcass of the ship shows that the artist aimed to reproduce a ship of the type of Nydam (Fig. 24) of about 300 A.D. The "horns" of the bow of the Smiss Ship testify to its relationship to that of Kårstad. But the latter type appears as the older, thanks to its contact with the Bronze Age forms, the ships equipped with "spurs."

On the basis of pattern the Kårstad Ships must, therefore, be assigned to the third century, as Professor Shetelig had already suggested.

A rock-carving of a Norwegian ship discovered later (Fig. 23) shows the special Iron Age type of ship in a new variation. Other traits of the Kårstad-carving, e.g. the form of the swastika and of the jara rune, point to the fifth century as the more likely time of origin of the rock-carvings in question.

#### Svintuna and Its Kastal on the "Eriksgata."

—By ARTHUR NORDEN, *Fornnannen*, pp. 263-79 and 347-66, with 15 figures. Along the Swedish east coast there were erected during the early part of the Mediaeval era, i.e. during the twelfth and thirteenth centuries, a number of circular fortifications of stone, the best known repre-

sentative of which was the citadel of *Tre Kronor* in the harbor of Stockholm (Kastell holmen?).

In recent years archaeological research has directed great attention to this system of fortifications at strategically important points of the Swedish east coast. The author now deals with a recently discovered stone tower of this kind from about 1125 A.D. It seems likely that it had something to do with the legally prescribed journey (Eriksgata) of the Swedish kings through the old provinces of Svea and Göta rike. The tower, whose diameter measures 8 meters, is for the most part demolished. The external wall has been removed. The tower is round within, but the exterior was polygonal (seven or eight sides) Figs. 74-77).

The citadel is situated on a small ledge at the present-day Uttersberg in the County of Krokek, Kolmorden, Östergötland, about one kilometer from the shore of Bråviken (Fig. 78). The estate on which the ruin stands evidently went under the name of Svintuna during the mediaeval era. In the neighborhood of Svintuna was the place where, according to Östgötalagen (the Law of Östergötland), the men of that province and their hostage met the king, coming from the province of Södermanland, in order to exchange their hostage for that of the men from Södermanland.

The author endeavors to explain for what reason the fortification was built in this locality, and shows that a rather large number of house foundations with adjacent burial fields, situated down on the very shore, no doubt represent an older spur of the fortification. The bay near the old manor is called Bodaviken, and the small farm on the land of which the old house is situated, Boda. The old Swedish name, *bodhar*, indicates that there was a receiving centre (?) with storehouses for the King's bailiff who, up in the wooded district, collected fees from the King's tenants.

This centre for collecting of dues was seemingly built by a royal bailiff on the opposite shore of Bråviken where the old crown estates Svinesund and Konungssund are situated. The bailiff probably lived on the latter estate, since the parish church—now Konungssund—had been established by that very manor.

The author connects the name Svintuna with the word *vin* which enters as a component part into many names in this part of the Bråviken district. Etymologically the word presumably means "waterless flats." The author rejects the notion that the name Svear from \**Sviar* (with gen. pl.

\**svina*) has anything to do with Svintuna and points to *Sveaboth*, a royal manor in the island of Öland which shows the usual form of the name *Seear* without the primitive Nordic—*n*—which originally appeared in the gen. plural of consonant stems.

### UNITED STATES

**Archaeological Field Work in North America During 1932.**—In *Amer. Anth.* 35, 3, pp. 483–511, C. E. GUTHE, editor, publishes the eleventh series of annual statements on American archaeological field work as assembled by the Committee on State Archaeological Surveys. This contains brief reports of 56 institutions throughout the country on their respective field activities in 1932, arranged by states.

**The Plains Culture in the Light of Archaeology.**—In *Amer. Anth.* 35, 2, 1933, pp. 271–287, W. D. STRONG discusses the culture of the Great Plains from an ethnological and an archaeological standpoint. The basic concept of this development rests primarily on the ethnology of the hunting tribes. This is both incorrect and incomplete. Further ethnological field work combined with archaeological research in the Dakotas, Nebraska, Oklahoma, and Kansas is necessary to bring about a better understanding. The Great Plains, one of the most important culture areas in North America, offers a rich field for research which may be expected to shed much important light on the antiquity and culture history of the American aborigines.

### CENTRAL AMERICA

**The Maya Correlation Problem Today.**—In *Amer. Anth.* 35, 3, 1933, pp. 403–417, L. ROYS discusses the question of our Christian equivalent for the Maya date 9.16.4.10.8. Analyzing the methods of the Spinden and the Goodman correlations, the author next considers those attempts at solution which have been based on classic Maya sources alone. While the problem remains unsolved, progress is being made, and further advance may well be anticipated from a number of recent developments.

### CHRISTIAN, BYZANTINE AND MEDIAEVAL

**A Sixth Century Tapestry from Egypt.**—In *Röm. Mitt.* 48, 1933, pp. 127–152, R. M. RIEFSTAHL publishes for the first time in Europe a tapestry from Egypt, now in the Metropolitan

Museum, which is woven in a hitherto unknown technique, the “looped knot,” probably executed with a hook, and similar to that of the Alpujarras rugs of Spain and the hooked rugs of North America. It is assigned quite conclusively to the sixth century A.D., because of the relationship of the border, which consists of a vine leaf and grape pattern, to the patterns of Coptic decorative stone sculpture of that century. Its Egyptian origin is certain because of its close relationship in color and technique to Egyptian woven work.

### Churches and Mosaics in Syria and Palestine.

—The first season's work by the Franciscans on Mt. Nebo (*Rās Siāghā*) has resulted in the laying bare of a large basilica divided into three naves by two rows of columns, eight in each. Flanking the whole north side is a chamber of undetermined purpose (ca. 23 m. 60 x 6 to 7 m.). The south side is flanked by two chapels: one, the baptistry, measures 10 m. 50 x 6 m. 0, and still contains the baptismal bowl hollowed out in the form of a Greek cross; the other, dedicated to the *Theotokos*, measures 13 m. 70 x 6 m. 10. Inscriptions found *in situ* inform us that the latter chapel was completed in the episcopate of Leontios and the rectorship of the two priests Martyrius and Theodorus, and that the baptistry was finished in 597 under the episcopate of Sergius, Martyrius being rector. The floor surfaces of the whole church were once embellished with mosaics, but they are now in a badly damaged condition. Traces of a structure antedating the Byzantine church were also found. It will be one of the tasks of future excavation to ascertain the nature of this. FR. SALLER, in *R.B.* xliii, 1934, pp. 120–127.

A new mosaic found in the church at Suwēdā in 1928 depicts a man holding in his right hand a lighted candlestick, while beneath his feet is a somewhat stylized plant—themes popular with the African mosaicists, only there the deceased is never depicted as holding the candle himself; it is usually set on a tripod beside him. The candles are regarded as symbols of eternal life, while the plants are thought to be emblematic of the flowers of Paradise. (Might they not rather be an allusion to the brevity of human life? Cp. *Job*, 14: 2, *Ps.* 103: 15 f.). An inscription above the head of the deceased—*CEPΓΙOC KAI ZH* (proven by excavations to be complete)—provides us with a new formula in Christian epigraphy: “(This is) Sergius and he lives.” That it is not a question of St. Sergius is shown by the absence of any saint



emblem usual in such cases. (M. ANDRÉ PARROT, in *R.B.* xliii, 1934, pp. 97-104).

**The Significance of the Pictures in the Jewish Catacombs at Rome.**—In *Studi e Materiali di Storia delle Religioni*, vii, 1931, pp. 144-156, I. ZOLLER reviews former interpretations of these paintings, and, differing from them, gives his own simple and logical explanation: The Arca Sancta, the receptacle of wine, the knife, horn, candelabra, etc., are merely religious articles commonly used by the dead. The Egyptians laid provisions and necessary articles in their graves, either in reality or effigy; with the Jews the custom took a religious turn, and these paintings are representations of the religious articles used in the Jewish cult. The landscape is not the Hebrew paradise; it is mere ornamentation copied from the synagogues of the day.

**The Excavations at Cluny.**—KENNETH J. CO-NANT reports that the Mediaeval Academy of America, since receiving permission from the French government in 1928, has excavated a considerable portion of the monastery of Cluny. This institution, founded in 910, was one of the great centres of western monasticism in the tenth, eleventh, and twelfth centuries. Some parts of the mediaeval abbey are still above ground, but most of the old buildings were destroyed in the eighteenth and nineteenth centuries. The foundations discovered by soundings, together with a considerable body of old drawings and descriptions, will make it possible to reconstruct the group on paper with considerable certainty. In some parts the restoration will necessarily remain somewhat diagrammatic, but in the case of the much discussed second church (ca. 955-981) and the early conventual structures described in the *Farfa Consuetudinary*, even a diagram is welcome. The third church (1088-1130 and later) was by far the most interesting part of the group. Its elaborate plan, structure, and decoration gave it very high rank among mediaeval buildings. A conscious attempt was made to achieve a synthesis of contemporary Romanesque architecture, while classical, Early Christian, Byzantine, and Mohammedan influences are discernible in the details.

Sufficient data were assembled to make possible the construction of a full-size replica of the apse arcade of the church in the court of the Fogg Museum, Cambridge. Detailed studies make it certain that the famous capitals of this arcade (among the finest of early mediaeval sculptures)

may be dated just before 1095. The substructures and many fragments of the monumental portal of the nave have been brought to light, and a scale model is being made as restoration studies progress. This portal was one of the earliest and most imposing of the great mediaeval church portals; it dated, probably, between 1109 and 1115. The iconography was arranged according to a consistent scheme involving episodes in the story of the resurrection, the ascension, and the apocalyptic vision, with reliefs of the four evangelists and paintings of eight sainted abbots. The chronology of these sculptures is important; the excavations have established their early date and thus confirmed Arthur Kingsley Porter's belief that they were of prime importance in the early development of mediaeval sculpture.

#### RENAISSANCE AND MODERN

**A Fresco, Two Miniatures, and Three Problems.**—In *L'Arte*, xxxvii, II, 1934, pp. 101-122 (11 figs.), LUIGI COLETTI describes the fresco of the *Triumph of S. Agostino*, formerly in the Church of S. Andrea at Ferrara and now in the Pinacoteca of Ferrara, and two miniatures by Nicolò di Giacomo, one of which is in Madrid and the other in Milan, that show similarities to the fresco in iconography and in modes of expression. The fresco is attributed by Zaccarini to a painter of Florentine formation of the end of the fourteenth century, and by Van Marle to the Ferrara School of the beginning of the fifteenth century. Coletti claims that the fresco is of the third quarter of the fourteenth century. By comparison with various codices, it is evident that about 1360, at Bologna, two similar types of miniatures were produced by Nicolò di Giacomo and by Bartolomeo de Bartoli, that fixed a tradition that probably diffused to other codices and even to frescoes. The work of Tommaso da Modena shows evidence that he, in his youth, may have worked in the shop of Nicolò di Giacomo. The Bolognese codices of the second half of the thirteenth century are similar in some respects to the fresco of the *Triumph of S. Agostino*.

**The Last Bellinesque Painter.**—In *L'Arte*, xxxvi, VI, 1933, pp. 415-431 (12 figs.), G. GRONAU discusses the work of "Petrus de Ingannatis p.," who has been confused with Bissolo, also an imitator of the manner of Bellini and of Giorgione. Through various sales several authentic works of Ingannatis were revealed that serve as a basis for other attributions. Among the works that G.



Gronau ascribes to Ingannatis are: the *Madonna and Saints* of the Kaiser Friedrich Museum, in which Giovanni Bellini is freely imitated; the *Madonna and Saints* at Vercel; the figure of a saint of the Rothschild collection in London, that is generally attributed to Girolamo da Santa Croce; the *Santa Conversazione* of Dresden that is ascribed to Ingannatis by Berenson; the portrait of a woman in the Kaiser Friedrich Museum that Berenson inscribes in his list of the works of Ingannatis with a question mark; the portrait of a woman at Monaco; the *Santa Conversazione* of the Capitoline Gallery of Rome, recognized as a work of Ingannatis by Berenson; the *Holy Family and Saint Sebastian* of Ravenna; the Madonna with the Magdalene in the Worcester Museum, that is placed on the lists of Berenson as a work of Ingannatis; a Madonna picture in the Sellar collection of London; and a portrait of a man that is signed by Ingannatis but greatly resembles the work of Bernardino Licinio.

**Traces of Pisanello in Ferrara.**—In *L'Arte*, xxxvi, VI, 1933, pp. 435-443 (4 figs.), ADOLFO VENTURI describes two works of Pisanello in Ferrara. One is a small painting of the School of Ferrara of about 1440 that is in the Massari collection and has been defiled by restorations. It represents Saints Francis, James, and Anthony Abbot. After careful examination, one can recognize in it weak indications of Antonio Pisano, who was called Pisanello. The other is a fresco of the *Resurrection* that is behind the main altar of the Church of Sant' Apollinare of Ferrara. It represents Christ rising from a sepulchre, while soldiers lie dormant about it. In spite of the very visible repainting of the head of Christ and also of one of the young guards, traces of Pisanello are very decided.

**Unpublished Designs of Francesco di Giorgio.**—In *L'Arte*, xxxvii, I, 1934, pp. 45-57 (5 figs.), CESARE BRANDI discusses and illustrates several previously unpublished sketches by Francesco di Giorgio. One is a prefatory study for a drawing of more perfected technique of a draped figure seen from the back. Another is of an agitated figure of Magdalene, that was evidently a rapid preliminary sketch for a figure in the famous *Deposition* by Francesco di Giorgio in the Chiesa del Carmine at Venice. Another is a mythological scene that is now in Siena. In his drawing Francesco di Giorgio reveals greater resemblance to his plastic art than to his painting. His atmospheric sensibility is superior even to that of Desiderio. His work shows

some influence from Gerolamo da Cremona and some linear quality of the Siennese School.

**Studies of the Medici Chapel.**—In *L'Arte*, xxxvii, I, 1934, pp. 5-44 (26 figs.), CARLO TOLNAY gives documentary evidence concerning the chronology of the architecture of the Medici Chapel and of its tombs and statues by Michelangelo. In the Medici Chapel are two different architectural systems, one of which is derived from the Tuscan Proto-Renaissance type that was inaugurated by Brunelleschi; while the other, that of the doors, tabernacles, and tombs, presents a certain analogy to the traditional type of Florentine tomb. The main walls of the Medici Chapel were already constructed in the Quattrocento, so the plan was preestablished. Originally Michelangelo treated the interior of the chapel similarly to that of the old Sacristy. At first Cardinal Giulio proposed placing four tombs in the center of the chapel. Michelangelo later developed the conception but not the traditional type of parietal tomb from his project of an isolated tomb. Except for difference in ornamental decoration, the architecture of the tomb of Lorenzo and that of Giuliano is identical. In 1521 Michelangelo ordered from Carrara the blocks of marble for the Aurora, the Crepuscolo, the statue of Lorenzo, and the Madonna. Later he records working on six figures which must have been the four Allegories, a Capitano, and the Madonna.

**The Beard of Moses and the Art of Michelangelo.**—BARNA OCCHINI comments on the criticism of Sigmund Freud, the art critic, of the beard, the proportion between the beard and the right hand, and the position of the tablets with respect to the seat in the *Moses* of Michelangelo. Occhini discusses aesthetic effect and its relation to baroque agitation and points out that a mixture of baroque and of classic, of impetuosity and of calm, and of violence and of repose is characteristic of the art of Michelangelo. *L'Arte*, xxxvii, II, 1934, pp. 123-131 (3 figs.).

**Francesco Segala, Portraitist.**—In *L'Arte*, xxxvii, I, 1934, pp. 58-65 (2 figs.), GIUSEPPE FIOCCO discusses the bust of Tiberio Deciano in the Museo Civico at Udine, the monument to Tiberio Deciano at the Chiesa del Carmine at Padua, and other sculpture by Francesco Segala. Fiocco maintains that the importance of Jacopo Sansovino in the influence of Venetian sculpture of the Cinquecento has been overemphasized, and discusses the contributions of Danese Cattaneo, Alessandro Vittoria, and others in this respect.

**A Bust in Terracotta by Danese Cattaneo.**—In *L'Arte*, xxxvii, I, 1934, pp. 66-74 (3 figs.), RODOLFO PALLUCCHINI attributes the previously unpublished terracotta bust of Matteo Forzadura in Padua to Danese Cattaneo instead of to Alessandro Vittoria. He compares it with the busts of Cardinal Pietro Bembo and of Lazzaro Bonamico by Danese Cattaneo, that reveal similar naturalism of anatomical traits and vivacity that is not evident in the work of Vittoria about 1570, the approximate date that Pallucchini gives to the bust of Forzadura.

**Unpublished Paintings of the Seventeenth Century.**—In *L'Arte*, xxxvi, VI, 1933, pp. 444-457 (7 figs.), FERNANDA WITTEGNS discusses several previously unpublished seventeenth-century paintings. *Saint John the Baptist*, in the Reverdin Collection at Rome, is perhaps a study for another painting by Caravaggio. A painting by Orazio Gentileschi, a follower of Caravaggio, in the Bonomi Collection at Milan, is a study for the head of Saint Clara of a known picture of Casa Rosei a Fabriano. *The Holy Family* by Lorenzo Lippi, another seventeenth-century Tuscan, is in the Scopinich Collection at Milan. *The Dead Christ* by Daniele Crespi, in the Negri Collection at Milan, is compared to a dead Christ adored by a saint that was in the Church of San Protaso of Milan and is now in the Basilica of San Giovanni in Busto Arsizio. The neo-Venetian current of the baroque movement is represented by a painting of Saint Catherine by Domenico Feti, in the Cicogna Collection of Milan, and by two canvases by Bernardo Strozzi, the one of his third version of *The Concert* in the Cicogna Collection and the other of *The Parcae* in the Bonomi Collection at Milan.

**Renoir.**—In *L'Arte*, xxxvi, VI, 1933, pp. 458-489 (16 figs.), LIONELLO VENTURI describes and

illustrates the various stages in the development of the paintings of Renoir. The early work of Renoir, especially from 1874 to 1877, was impressionistic. He was influenced by Delacroix, Courbet, Manet, and Diaz. Various Italian influences that became prevalent during his journey in Italy in 1881-82, and his final discovery of Ingres in the Louvre, precipitated a change in his style of painting and even caused him to imitate the work of Girardin. Between 1890 and 1900 the productions of Renoir oscillated between the demands of refinements and the immersions into real life. From 1900 until his death in 1919, the work of Renoir shows a development toward more intense color, a greater freedom of style, more form, and more monumental poses. Renoir created images from nature without conforming directly to the images of nature.

**Gauguin.**—In *L'Arte*, xxxvii, II, 1934, pp. 136-166 (11 figs.), LIONELLO VENTURI records the major events and influences in the life of Gauguin and, through a discussion of some of his paintings, shows his development. Important years in his life were 1883 when he left his occupation to devote himself entirely to painting, and 1891 when he went to Tahiti. From 1905 to 1910 Gauguin was one of the dominant figures in contemporary art. He admired Monet, Renoir, Pissarro, and above all Cézanne, and understood that impressionism is something more than naturalism. At the same time the decorative philosophy of Puvis de Chavannes attracted him. Gauguin adopted the use of pure color and produced compositions that are synthetical, symbolical, and decorative. Under the influence of Hegel, Gauguin recognized the proper affinity with the symbolic art of the Persians and of the Egyptians, types that appealed to his primitive sense.

## NEWS ITEMS FROM ATHENS

At the Open Meeting held at the American School on February 27, Mr. Shear reported on the 1933 excavations in the Athenian Agora<sup>1</sup> and also announced the recent discovery of the Tholos in the early weeks of the 1934 campaign, thus providing a definite point of departure for the topographical study of the region and the identification of the foundations of the other buildings near it, such as the Bouleuterion and Metroon. Another valuable aid for this study was provided some weeks later when the corner of the surrounding wall of the "Altar of the Twelve Gods" with a marble block bearing the dedicatory inscription to these gods was uncovered near the electric railway to the Piraeus. Trial trenches dug under the tracks enabled the excavators to find the other corners and get full details and measurements. The work in the Agora will continue through the third week in May.

During the winter Mr. R. P. Bredan and Mr. Sterling Dow of the American School made a systematic exploration of the bed of the Ilissos River. They report<sup>2</sup> that in the stretch between the Stadium and the Fix Beer Factory, trimmed marble is common, most of it thin revetment. Between these two points is the church of Pantaleimon, shown on Judeich's map in G8. This is near the area of the British excavations (*B.S.A.*, 1896-7, pp. 89, 112, 232, etc.) which revealed a gymnasium, Proto-Attic sherds (*J.H.S.*, 1902, pp. 29 f.), fifth-century grave stelae (*J.H.S.*, 1897, pp. 174-5), and remains of later graves. Bredan and Dow found near here in the river-bed a peculiar geometric sherd with part of a large maeander, on which Mr. J. F. Daniel writes: "The geometric sherd, of usual Dipylon technique, is difficult to assign. From the flow of the paint it seems certain that this is from the top rim of some vessel. It would at first appear to come from a large olpe, such as Collignon-Couve, no. 228, but, with a diameter at the mouth of about 0.60 m., the height of the piece would have to be some 1.50 m., much larger than any known examples of that shape. Considerations of size are equally incompatible with an attribution to a grave amphora. Am-

phorae in the Dipylon technique invariably have a strongly profiled mouth. Perhaps the strongest likelihood, though it is far from certainty, is that this is a sherd from the rim of a large krater, of the general type of Collignon-Couve, no. 214. Attic geometric kraters are generally without a neck, or, at best, with a low and strongly profiled one with an offset lip. The lack of an offset lip is not necessarily an objection. If this is to be restored as a fragment of such a lip, it is that of an extraordinarily tall one. To complete the maeander and give room for the bars below (probably three in number and covering the joint with the body of the pot), we must allow for a height of about 9 centimeters. The neck would thus be higher in relation to the diameter of the mouth than is that of the above-mentioned C.-C. 214. To find a complex maeander at the very top of the neck would be distinctly surprising on an amphora or olpe, or any other high-necked pot, whose decoration is based upon a system of zones of distinctly minor dynamic importance, leading to and dependent upon a heavy zone nearer the center of the neck. A complex maeander at the top of a tall neck is incompatible with such a scheme. On the low and ornamentally isolated neck of a krater, such a design is not only not objectionable, but is distinctly desirable, giving an organic unity which no group of smaller zones could assure. Thus we are driven to assign this sherd, if to any known shape, to the neck of a krater, and a very respectable one. The relative height and plain lip of this hypothetical neck are interesting, and not inconceivable."

Close by was found part of the pediment of a late fourth-century Pentelic grave stele broken at either end and below (height 0.097 m., width 0.13 m., thickness 0.08 m., height of letters 0.013 m.), inscribed [*Ἀνδρῶν* *vacat* or some such name, the pediment showing that three or possibly two letters should be supplied for the one name. Thus it commemorates a slave or metec. A curious discovery from just below Pantaleimon was the lower part of a draped standing statuette in porphyry (height 0.10 m., width 0.11 m., thickness 0.075 m.), the back being finished smooth, but not perfectly flat. Porphyry revetment is known in Athens, but apparently this is the first porphyry statue. From below the Fix plant comes

<sup>1</sup> Mr. Shear's reports have already appeared in the *A.J.A.* and *Hesperia*.

<sup>2</sup> This report was secured through the courtesy of Mr. Dow.

a battered relief of the "Mother of the Gods" (height 0.135 m., width 0.12 m., thickness 0.08 m., no dimension original). This type is common in Athens; other specimens are visible in the Peiraeus Museum, the British School collection, the Agora, etc. Other finds include a piece of a marble bowl, and some small Byzantine sculptured and architectural fragments. Sherds were notably scarce. The inscription is now in the Epigraphical Museum (inventory number 12,818); the other objects are in the collection of the American School. Apparently these are the first objects recorded from the bed of the river.

Architectural remains call for notice at three points. (1) Just below the bridge on the road to Sounion are a few ancient poros and limestone blocks, and two unfluted Pentelic columns, one 0.50 m. in diameter, and the other, which is unfinished, 0.45 m. Both are half buried near remains apparently of a Turkish bridge. Possibly there was a Roman villa nearby (Judeich<sup>2</sup>, pp. 416-7). (2) The traces of 'Kallirrhoe' noted in Judeich (p. 194) as being visible by the river bed near the Olympieum are no longer to be seen. No trace here or elsewhere of the alleged water conduit to the Peiraeus (Judeich<sup>2</sup>, p. 203, and map) was observed; it is possible that Ziller was misled by channels and basins worn by the water itself. (3) Approximately at the point where the controverted third long wall, the 'Phalerian,' should have crossed the Ilissos, there are two poros and two limestone blocks, all but one of the latter being trimmed. The sizes are all different, so that they would not naturally be associated with the wall, on which see Cary, *J.H.S.*, 1914, pp. 242-8, Judeich, p. 155, n. 4, etc., p. 458; Day, *Trans. Am. Phil. Assn.*, 1928, pp. 164-178. At the same point Ziller claimed to have found traces of an underground water system leading to the Peiraeus; but aside from these unlikely blocks, no other possible trace in this region is now evident.

The American School excavations at Corinth began early in April and have centered chiefly on the South Stoa of the Agora where Mr. Broneer has already discovered more mosaic floors similar in workmanship to the one found last year. Miss Davidson is also excavating near the south end of the West Colonnade in order to continue the study of the Agora region. The new Museum at Corinth was dedicated on April 29 in the presence of the donor, Mrs. William H. Moore, and of Mr. Peabody, the Chairman of the Board of Trustees of the American School.

Other excavations already under way are those at Olynthus in Macedonia, under Professor David Robinson assisted by some of his students from Johns Hopkins, and the University of Cincinnati's excavations at Troy under the direction of Professor C. W. Blegen.

Open Meetings were held at the French School on January 31, February 28 and March 7. At the two last M. Jean Capart, Director of the Royal Museums of Art and History in Brussels, spoke on "The Domain of Zoser" and "Humor in Egyptian Art." M. Capart also lectured at the Greek Archaeological Society on March 6 on "Masterpieces of Egyptian Art." At the meeting on January 31, M. Roussel, the Director, gave a summary of the work of the French School during 1933. The excavations had been confined chiefly to Thasos, Philippi and Delos, with only supplementary researches in Crete. The work at Thasos, directed by M. Lanney, showed that the "Hypostyle Hall" excavated the preceding year had two superimposed Ionic orders. This was proved by the clearing of the foundations of the central colonnade and the discovery of supplementary architectural members. The principal excavation, however, was that of the building discovered in 1932 to the east of the Arch of Caracalla. Here were cleared a complex group of ruins undoubtedly constituting part of an enormous Sanctuary. The northern part of this region consists of a terrace about 23.65 m. x 20.30 m. with heavy supporting walls of marble, of careful Greek workmanship. This terrace had a paved surface surrounding a small rectangular building 12.50 m. x 9.40 m., a simple cella without colonnades. It appears to date from the fifth century B.C., but unfortunately nothing above the foundations remains; even the stylobate has disappeared, as a Byzantine structure was built over it. To the west, running down from the terrace is a wall 19 m. long bordered by a water channel. This wall, as well as another at right angles to it, is constructed in squares with a raised border. The panelled wall is interrupted toward the south by a great stairway with 67 steps which show numerous fastenings and cuttings for the insertion of stelae, etc. This must have been, therefore, a sort of ex-voto stairway like that below the west façade of the Parthenon limiting the Sanctuary of Athena-Ergané. To the south extends a great paved court which rises with a slight slope towards another badly ruined stair. From the evidence of this year's excavations this large complex must date from about the end of the sixth century B.C.



The building on the terrace was perhaps a treasury or even a small temple. Among the architectural members recovered should be noted a Doric column drum with a fragment of the capital, a door-lintel decorated with egg and dart moulding, a great number of "beads" of an unusual type. One of the important finds was an inscription containing a dedication to Herakles by a certain Akeratos, archon at Thasos and Paros. The inscription, from its lettering, must be dated at least as early as the beginning of the fifth century B.C. The name of Herakles is important because it enables M. Lanney to identify this Sanctuary as the famous "Herakleion," long sought for at Thasos. In addition to the torso found on this site in 1932, thirty-five more pieces of sculpture were recovered in 1933, the two most important being the head and shoulders of a horse in white marble, life size, of beautiful workmanship and perfect preservation, dating from the middle of the fifth century B.C.; a block of marble (0.66 m. high, 0.70 m. long) which terminates in the forepart of a winged horse, whose right wing, curved like a sickle, is outlined in low relief on one of the lateral faces of the block, while the left wing stops where it meets the block. The work is done with extreme care and delicacy and must date from about 520 to 490 B.C. In addition to these sculptures there was a very rich harvest of terracottas, among which should be mentioned: a Gorgoneion; a fragment of cyma representing a hunter on horseback, which still keeps its rich polychromy; three antefixes, surmounted by a palmette or a lotus and each showing a horseman riding a winged horse at a gallop and holding a spear point downwards. The horse is all black on one example and white with black spots on another. This abundance of winged horses cannot be due to mere chance, and perhaps Herodotus' story of the Tyrian origin of the Herakles of Thasos may here find some confirmation. The sherds found belong to orientalizing or black-figure vases, and among them is the handle of a large vase decorated with a black sphinx, and the bottom of a cup representing a Gorgon. The coins belong to many different periods and number one hundred and twenty.

At Delos the excavations, directed by M. F. Robert, were carried out near the seashore where in 1886 Fougères had found an altar. Later, in 1923, trial trenches had determined the outlines of a peribolos and a rectangular building. The peribolos measures 32 m. on the east, 30 m. on the south, while the north side is only 17 m. long and

the west 16 m. The construction is very careless in style. It appears to have been a sanctuary with two entrances, one at the east, and another at the west; the latter is flanked by a small altar of marble and granite and a lustral basin in marble. Within the enclosure must have stood the marble altar found by Fougères, as well as the Temple, measuring 14 m. x 6.70 m. and opening to the south through a doorway whose marble sill was found. The temple consists of a cella without a pronaos. At a lower level were found traces of what appears to have been an archaic temple oriented towards the east and divided by a partition wall into a cella and pronaos. On the north, a great structure bordered the wall of the Sanctuary and extended as far as the sea. This must have been a warehouse of some kind. In a region so near the sea and accessible to pillagers not many finds were to be expected, but fragments of two colossal statues in marble were recovered, one of the archaic *Kouros* type and the other Hellenistic in date. There was also a small archaic terracotta head of a Dioskuros with *pilos* headdress and many fragments of female statuettes in marble and terracotta. But the most important discovery was that of a metrical inscription, dating probably from the first century B.C., since it tells us that this Sanctuary was that of the Dioskuri, already mentioned in the inscriptions from Delos as distinct from that of the Cabiri. The potsherds found in the course of the excavation show that the cult of the Dioskuri was celebrated at Delos at a very early date.

In Crete M. Demargne was chiefly concerned with a final clearing of the constructions excavated in the preceding campaigns and in having drawings made preparatory for his publication of the site. At "Chrysolakkos" supplementary trenches were dug which revealed a long room with stuccoed walls, bordered by benches, opening through a series of doors to a funerary monument. One of the neighboring rooms contained a stone with cup-shaped depressions, similar to that already found in the same region in an earlier campaign.

At Philippi the work was carried on under the direction of MM. Collart, Lepalus and Lemerle. It was confined to two regions, that of the Forum of the Roman Colony and that of the Byzantine Basilica. On the west side of the former a portico of packed earth reaches from the western temple to the southwest angle of the square. It communicates with the pronaos by a door and opens



on the Forum through a colonnade. It was closed at the back by a wall, behind which there was left an open space. On the long north side of the Forum farther forward, the western entrance ramp was cleared, and then a long basin filled with a great quantity of blocks fallen from above. Among these were found a lion's head waterspout and eighteen large plaques of marble, seven of which bore dedicatory inscriptions. The great temple at the northeast corner is in the Corinthian order with two columns *in antis* like the one in the northwest corner. It is of great size, the cella having a depth of 17.28 m. and a width of 12.38 m. The side walls were built of rubble construction to a height of 1.7 m. with brick used above that and large slabs of marble as facing. At the base of the wall were found several fragments of an inscribed base dedicated to the "Genius of the Colony." The pronaos, built of marble, is 11.28 m. wide and 5.66 m. deep. It opens on the right through a monumental doorway to the adjoining Portico. To the right and left of the door which leads to the cella, were set two large bases in honor of C. Modius Laetus Rufinianus, Quaestor of the province of Macedonia and Curator of the Republic of Philippi. It was due to the generosity of this high Roman official that this temple had been erected. Near the temple traces of other large and richly decorated buildings were observed—one of them may have been a library. Among the smaller finds should be mentioned a marble head of a youth, of the first century A.D., and two gold coins, in perfect condition, one of Theodosius II (408–450 A.D.) and the other of Constantine Porphyrogenitus and Romanos II (948–959 A.D.).

The excavation of the historic Byzantine Basilica at Philippi was directed by M. Lemerle. In this second campaign M. Lemerle cleared the southern half of the Basilica, including the Chapel and the Baptistery. The choir was found in good condition with the throne and the ambon to the east and north of the *templum*. The pavement of the choir was found to be of mosaic, which, in the opinion of the excavator, belongs to a Roman edifice earlier than the Basilica. The Chapel and the Baptistery adjoin the choir on the south and north but are not so well preserved. At the north end of the Basilica traces are visible of the stairway leading to the tribunes. The general plan of the atrium may be recognized, and there was undoubtedly an exo-narthex with a light roof, then a vast rectangular space surrounded by porticoes. In the axis of the church a monumental entrance was

veneered with marble. The examination of the three existing piers has given important results, since a scaffolding was constructed so that the upper portions could be measured and studied in detail. The piers were found to contain many reused blocks from the Roman buildings of Philippi and some interesting inscriptions. The carving on the capitals is especially fine and vigorous, resembling those of Santa Sophia and Ravenna. Many fragments of sculptured relief were found and these show a very rich animal and floral decoration. The designs in the recesses of the cornice represent various marsh birds: duck and pelican, also cuttle-fish, dolphins, pomegranates, etc. About one hundred Greek and Latin inscriptions were recovered, some from the tombs which filled the Basilica and others from the piers. Among the inscriptions are dedications by members of a religious association in honor of an agonothete of the Greater Asklepeia and another by the devotees of Serapis.

On March 4 the annual meeting of the Greek Archaeological Society was held when the Secretary reported on the excavations carried out during 1933 under the auspices of the Society.

Professor Sotiriou continued his work at New Anchialos in Thessaly, where the clearing of the third great basilica was the chief object of the 1933 campaign. In the course of his work there was uncovered a large part (20 m. x 5 m.) of the floor of the right aisle of the nave which is paved in mosaic in geometrical designs with spirals and interlaced bands. The mosaic is still covered with a thick layer of chalky deposit which must be carefully removed before the decoration can be studied in detail and a comparison made between this mosaic and some earlier ones found at a lower level. They should provide very good evidence for the evolution of the art of mosaic from the fifth to the end of the seventh century when this Thessalian city was destroyed. Another mosaic found outside the nave will also help in this study as it came from a still lower level. The designs here are also geometric: curvilinear meanders and hooked crosses, but these again cannot be studied in detail until the next campaign. They appear to belong to a construction earlier than the basilica, perhaps dating from the fifth or the beginning of the sixth century. Researches were also carried out in the interior of the central nave of the basilica, where the pavement was made of marble slabs. Of the columns which divided the nave from the side aisles, only the Ionic bases and the

raised stylobate of the left rank remain. This is of reddish trachyte on a low foundation of limestone. Of the right colonnade only fragments of the bases of the columns were found, but several pieces of the shafts of the marble columns of the Prokonessos were recovered as well as two of the capitals encircled with pierced acanthus leaves (cf. those of Santa Sophia) and surmounted by simple *abaci* which are decorated with a Latin cross on the narrow ends. The third point of research was the inner and outer narthex and the atrium. The paving of the inner narthex consisted of marble blocks while the outer narthex and the atrium had mosaic pavements. The mosaic of the narthex is geometric in style with great circles framed by an interlaced border and surrounded by lozenges of blue and white in alternation. The whole is enclosed in a double band made of interlacing arcs with small crosses and in some places with meanders. Still more important is the small section of mosaic near the right portico of the atrium (all that has been cleared here), for it includes representations of animals: deer, peacocks and other birds pecking at flowers or branches. The mosaics of the outer narthex and the atrium are obviously much older than the mosaic pavement of the right aisle, not only because of the depth at which they were found but also because of their style of workmanship. Mr. Sotiriou, as the result of this last campaign, has decided that the oldest remains on the site belong to a building of unknown purpose which dates from the last part of the Roman period. Above this was built, towards the end of the sixth century A.D. or the beginning of the seventh century A.D., the basilica which he has been clearing and to which belong the capitals, architraves and mosaic pavements found at the higher level in the right aisle. Eight rectangular plaques (0.42 m. x 0.45 m. x 0.37 m., 0.08 m. thick) found in the right portico of the atrium are of great importance, as they bear bas-reliefs with the following subjects: dolphins on either side of a floral motif ending in a trident; on either side of a cantharus, double-headed eagles coming out of horns; one of the eagles drinks from the cup; a heron or partridge biting a serpent, in the midst of stylized plants; a design of acanthus leaves and ivy leaves with tendrils. These plaques were intended, according to Mr. Sotiriou, for the capitals of the pilasters but apparently never had been used when the building was destroyed at the end of the sixth or beginning of the seventh century A.D. Noteworthy also are the three older capi-

tals which have acanthus leaves in relief, as their workmanship places them in the latest part of the Roman period but they were re-used in the Christian building.

To the northwest of New Anchialos, Mr. Sotiriou discovered, by trial trenches, a fourth basilica, on the hill which is called St. Demetrios. He found here the foundations of the west wall, a rank of columns of an Early Christian church and an excellent piece of an ambon of the sixth or seventh century decorated with palms and eagles with spread wings. Mr. Sotiriou also recovered numerous Christian funerary inscriptions from the region of New Anchialos.

Another important basilica was excavated in 1933 by Professor Orlandos at Sikyon. Beyond the railway station of Kiato trial trenches had revealed two years ago a large Christian basilica which has now been cleared. The church belongs to the so-called "Hellenistic Basilica" type, that is, a rectangular building with interior rows of columns. The Basilica at Kiato measures 65 m. in length and 21 m. in width with its central aisle 40 m. long and the additional 25 m. taken up by the narthex and what would appear to be an atrium, although it has not yet been excavated. The church has a chapel built out on the north side with a pavement of polychrome marble, a square altar and the base of the templum or screen in the Ionic order. A slab or the parapet from the screen is preserved with a crown and part of a dedicatory inscription "*καὶ πάντων καλλιεργούντων*," obviously the latter part of the phrase: "Remember, Lord, Thy servant. . . ." On the north side of the church is a square building communicating through doors with the north aisle, and containing a tank without any outlet for the water, which identifies the room as a Baptistry. Two other rectangular structures were found on the two narrow sides of the narthex and must be identified as sacristies. Three doors, the central one of which is triple, lead from the narthex to the church. The high bases of the columns of this triple door were found, as well as one capital, of the composite Corinthian order, with protomes of crouching rams on the corners of the abacus and in the middle of each side eagles trampling on small oxen lying on their backs. Similar capitals with rams occur at Ravenna, Thessalonica, and Roman examples appear in the Temple of Concord at Rome and in Asia Minor.

The church was three-aisled with the central one broader than the two side aisles (10 m. and

5.50 m.). The capitals are Ionic with separate *abaci* bearing crosses and sculptured decoration. The walls of the middle aisle rising above the roof of the side aisles are pierced by windows, and there clearly was no women's gallery. The presbytery of the church is interesting, for it is so well preserved and belongs to only one period, since the church was never rebuilt. The presbytery has the same width as the central aisle and does not extend beyond it to the sides as was customary from the time of Justinian onwards. It consists of two parts, the apse and the rectangular choir (8.35 m. x 6.50 m.) in front of it. The pavement is of polychrome marble and is 0.25 m. higher in the apse than in the choir. On each side of the rectangular choir are the seats of the priests with the floor level as high as the apse. Other seats were found in the semi-circle of the apse, with the throne for the chief priest in the middle. The altar was found in the centre of the rectangle and was of marble, to judge from the few remains, and was covered by a slab with incurving rim. No pieces of the ciborium were found. Belonging to the templum screen was an Ionic base of poros with clear traces of the fastenings for the upper part of the screen, that is, on either side of the central door, one high column and on either side of the columns, a low perforated balustrade with mosaic decoration. All these details show the church to be a typical Early Christian basilica, and lead Mr. Orlandos to date the Sikyon-Kiato example in the fifth century A.D. and to consider it as one of the most important of the basilicas of Christian Achaia.

In western Macedonia Professor Keramopoulos has continued his investigations at Florina which he has identified as the ancient Herakleia on the river Lykos which traverses the modern city. The 1933 campaign uncovered several additional houses and a street about 37 m. long with a width of 1.75 m. to 2 m. The construction of the street is simple and without paving. Under the surface were found sherds of a Megarian bowl and a bronze statuette of a helmeted man. The neighboring houses produced some terracotta statuettes and vases, one of which is a Megarian skyphos with the Taking of Troy represented in relief and with inscriptions explaining the details, "Ilion," "the Taking of Ilion," "Ulysses," "Ajax," "the Trojan Horse," etc. A fragment of a similar skyphos bears the name Alexander. Household utensils both in clay and metal were found as well as many coins. The earliest coin found goes back

to the period of Alexander the Great, although some of the potsherds may be as early as the first part of the fourth century B.C.

Mr. Keramopoulos also made some topographical investigations and verified the existence of several ancient and Byzantine fortresses. Beyond the village of Ano Kleinai, on the summit of Mt. Kales is a Byzantine one with a cistern, perhaps Justinian in date, while on the slope of the mountain were found the remains of a small fortified town and numerous fragments of pottery of the Hellenistic and Roman periods. Near the village of Petrai his investigations led him to identify the Lake Ostrovo with that called in ancient times Vegorritis and to understand the strategic importance of the pass which opens between the hill Lilik and the heights near the lake. Mr. Keramopoulos found the defensive fortifications which had guarded this natural gateway. At the summit of the hill Lilik he discovered the remains of an ancient wall of large blocks of stone and also another wall near the eastern exit from the pass of Petrai. These two walls formed, with the lake, a defensive triangle and overlooked the passage of the Via Egnatia to the lake. A comparison with other Macedonian fortresses showed that, at many points, Justinian had used blocks from ancient fortresses in constructing his fortifications.

At Anarrachi (Devri) which dominates Mt. Kastri (1103 m. high) was found a great wall of masonry with towers. A coin of Justinian found here appears to give the date of this wall. Beneath the Byzantine construction there was a good enclosure wall older and more extensive, built of large stones but destroyed in places by the Byzantine builders. Within it there appears to have existed, near the summit of the citadel, a still older wall, thus forming a system of multiple guarding walls.

At Tsotyli remarkable archaeological finds were made by chance in the neighboring villages. Trial trenches at Sianisti brought to light some tombs of the late Roman period, with coarse vases and a coin of Constantius (333-350 A.D.). To the north of Tsotyli at a place called Boufari, above the village of Lopes, was found a small fortified town extending over two hilltops and the connecting ridge. This was enclosed by a strong circuit wall of cut stone, which was double in some places. Hellenistic potsherds and other traces of human habitation were found everywhere in the fields, as well as some bronze bracelets, triangular in section, with incised decorations of concentric circles and

herringbones. The bracelets were found with a coin of Alexander the Great. This was, apparently, the site of Levaia mentioned by Herodotus.

From the region of Sianisti came some very remarkable bronze vases which have been brought to Athens. These are an amphora whose handles terminate in dolphins holding a lyre in their mouths, a basin with interwoven tendrils for handles and a plain undecorated pail or bucket. In addition to these vases there were found two incomplete statues of Aphrodite in terracotta, a fragment of a silver mirror, two iron axes and a Corinthian aryballos of the sixth century B.C.

Reports are now available of two excavations in the prehistoric field. The British School again carried on a short campaign in Ithaca in April and May, 1934, under the direction of Mr. Heurtley, the former Assistant Director. "At Aetos the remaining part of the Lower Protocorinthian deposit which had been left undug in 1932 was cleared. This deposit, which is on a slope, is clearly separated from the Upper deposit by stones put down to level up the ground and forming a kind of platform on which the Upper deposit subsequently accumulated. The pottery and small finds from the Lower deposit have an earlier character and orientalizing elements have not yet appeared.

"In the adjoining area, which lies further up the slope towards the sanctuary and which is separated from the Protocorinthian area by a wall, Miss Lorimer completed, as far as was possible, the clearance of the Protogeometric 'cairns.' The pottery which has now been studied proves, however, to reach back beyond the Protogeometric period into the Mycenaean (L.H. III). This is shown by the presence of seven fragments of kylix-stems, of stirrup-vases and other elements which had fallen into disuse by the beginning of the Protogeometric period. The transition from the freehand concentric loops to compass-drawn concentric half circles and circles is well illustrated, and it seems, in fact, that we have to do with a continuous series from L.H. III to early Protogeometric."<sup>1</sup>

The excavations at Troy conducted for the University of Cincinnati under the direction of Professors W. T. Semple and C. W. Blegen were continued during April, May and June, 1934. "Inside the citadel considerable progress was made in the careful examination of the stratifica-

<sup>1</sup> For this report I am indebted to Mr. W. A. Heurtley.

tion. In square E 6 the greater part of a house and portions of several others, grouped about two intersecting streets, were cleared, with a series of successive floors which yielded masses of pottery, many implements of bronze and bone, and other miscellaneous objects in bone, stone, terracotta, etc., the most remarkable being a deerhorn-handle carved to represent a human face. The lowest floor reached this year seems to belong to Troy III. The pottery includes a great many vases, more or less nearly complete, of various shapes, among which might be specially mentioned several 'face pots,' and a number of vessels in Early Helladic ware, some of imported and some of local fabric.

"In the trench in squares F 8-9 work was confined chiefly to the middle section, where some 2 m. of deposit were gradually removed. Several strata were distinguishable, all belonging apparently to the period of Troy VI and the transition to VII. The architectural remains were difficult to interpret, but the yield of pottery was rich and illuminating: along with the characteristic gray wares of Troy VI were found numerous pieces in the Mycenaean style, and again imported specimens and local imitations can be clearly differentiated. The most notable piece in the latter category is a well shaped cylix decorated on either side with a boldly painted octopus."<sup>2</sup>

"Soundings within the house discovered by Dörpfeld in 1894 and called by him VI F revealed the original floor at a level far deeper than had been anticipated. Although only a portion of it has yet been excavated, the complete floor seems to be well preserved, covered by a layer of carbonized matter. The stone bases of the columns that supported the upper floor or roof are still in place, apparently aligned in two rows, but the exact arrangement can only be determined when the excavation of the house is finished next season. Considerable ceramic material of value for dating the building was recovered. Similar soundings were made in the neighboring house VI G, where at least eight huge storage pithoi, sunk beneath the floor, probably during a reoccupation in the time of Troy VII a, have presumably obliterated for the most part the floor levels of Troy VI. Here again the evidence was clear that Troy VII a had been destroyed in a conflagration. In a small recess on the east side of the building two intact pithoi were found, one partly filled with earth, the

<sup>2</sup> For this report I am indebted to Mr. C. W. Blegen.



other still covered by its original circular stone lid. Each contained a large pot of typical Seventh 'City' ware, and in one pithos was a curious collection of seven weasels' skulls. In a layer of deposit overlying the building and assignable to Troy VII *b* or later, some interesting pottery was recovered, including good examples of *buckel keramik* similar to that found by Heurtley in Macedonia.

"On the northern side of the citadel a vast amount of Schliemann's dump was moved, in squares C 2-3 and D 2-3, in an effort to trace the continuation of the Second City wall. Further digging is still necessary to complete the exploration on this side, but it seems now clear that a large part of the wall was removed by Schliemann in his earliest campaigns. An extensive area of undisturbed deposit belonging to Troy I was brought to light below the level of the Second City, and test pits, reaching hard pan at a depth of 4.50 m., revealed many successive layers of First City debris, yielding a considerable amount of pottery.

"In square A 5, also, an enormous mass of dump was removed in order to examine the Sixth City wall at the point where it breaks off on Dörpfeld's plan. A massive tower or buttress, assigned by Dörpfeld to Troy VIII, has here been built up against the wall of VI. Probing into this buttress from the north brought to view a smooth, finished end of the Sixth City wall, which suggests that there was originally here a gate resembling in plan the East Gate of the citadel, with the city wall continuing in a new line. Further excavation will be undertaken here next year in the hope of settling this problem.

"Outside the citadel the search for the Trojan cemeteries was continued, and at the southern edge of the plateau, toward the village of Kalifatli, a series of incineration urn burials was uncovered, nineteen jars in undisturbed state and fragments of many others that had been broken and scattered. The jars were of many shapes, principally craters, and they contained ashes, remnants of burned bones, sometimes a few diminutive pots and fragments of other small objects and ornaments that had not been entirely consumed on the funeral pyre. The cemetery belongs clearly to Troy VI, and it is thus definitely established that cremation was customary at the time of the Sixth City.

"In collaboration with Dr. Hamit Zübeyr Bey, Director of the Department of Antiquities at

Ankara, exploratory soundings were made at four other sites in the Troad. On Ballı Daglı, the rocky hill which rises above the village of Bunarbashi, no traces of prehistoric occupation were found outside the small citadel crowning the summit of the hill. Trenches dug inside the acropolis revealed a substantial layer belonging to late Classical and Hellenistic times, and beneath it a thin stratum yielding some pottery but no architectural remains assignable to the period of Troy VII and VI. The acropolis was certainly not at that time an inhabited site of any importance. A similar place of refuge for the surrounding population in time of danger, was examined on the opposite side of the Scamander, on the precipitous bluff called Eski Hissarlık. Here, too, the slopes of the hill yielded no evidence of occupation at any period, but within the rather small fortified stronghold at the summit a few fragments of pottery, going back perhaps to the time of Troy VII, or even VI, were found, but the quantity is so small that there could have been no permanent settlement here.

"Trial trenches dug on the hill called Kara Tepe, some 7 km. to the east of Hissarlık, made it certain that this hill was never occupied in pre-classical times. Fragments of pottery and tiles, found inside and about and under the foundations of a temple-like building at the summit of the hill, indicate that the structure really dates from Hellenistic times, although its crude technique has caused it to be erroneously attributed to the archaic period.

"A hitherto unknown site, called Kum Tepe, discovered by members of the expedition, on the west bank of the Scamander not far from the river's mouth near Kum Kale, was investigated by means of several trial trenches. The deposit due to human habitation had a depth of some 5 m. which yielded quantities of pottery, miscellaneous objects of terracotta, bone and stone, and four graves. The upper meter and a half of the deposit apparently belongs to the period of Troy IV and V; the lower layers belong to Troy I, and the early beginning of this latter culture, as represented in the lowest strata at this site, probably falls still within the Neolithic Age; at any rate it seems to give a phase antecedent to any yet found at Troy itself. The four graves yielded skeletons in fairly good state of preservation, lying in the familiar contracted position. The only accompanying object was a small plain cup of white marble."

ATHENS, GREECE ELIZABETH PIERCE BLEGEN



## NEWS ITEMS FROM ROME

These pages form the sequel to *A.J.A.* XXXVII, 1933, 497-508; and again the possibility of printing the most recent information, with valuable illustrative material, is due to the liberality of the Italian authorities and of colleagues.

To begin with Rome. In the Forum Romanum, the untiring energy of the Director, Commenda-

Some idea of the monumental character of the zone through which there now runs the Via dell' Impero is given by Figures 1 and 2.

The temple of Venus Genetrix, which formed a prominent feature of preceding reports, has received further attention during the past year. The superstructure was thoroughly rebuilt under



FIG. 1.—VIEW FROM NORTHEAST CORNER OF CAPITOLINE HILL, LOOKING TOWARD MARKET OF TRAJAN AND QUIRINAL. IN FOREGROUND, CLIVUS ARGENTARIUS AND TEMPLE OF VENUS GENETRIX  
(Courtesy of R. Davico)

tore Alfonso Bartoli, is at present directed toward the Basilica Aemilia and the zone between it and the new Via dell' Impero. The painstaking investigation of this important area which is still in progress may be expected to yield valuable results, especially for the architecture and the history of the basilica itself. For the present, it will suffice to record the remounting, on a modern base, of the fragments of the well-known monumental inscription to Lucius Caesar at the southeast corner of the basilica.

Trajan. The three columns and the portion of the entablature which have been re-erected are already a familiar sight to Romans and visitors (Fig. 3). As in the case of the neighboring temple of Mars Ultor, the back wall of the cella is extended to form the back of the colonnade. In each of these two temples, especial interest centers in the apse: and in the present instance it has proved possible to penetrate to the masonry core supporting this architectural feature, which is attributed to the original construction of Julius

Caesar. This appears to be the earliest instance of the use of an apse as part of a temple showing the Graeco-Roman interpretation of the Italic type: and it is in fact earlier than the apses which occur in such structures as the underground basilica of Porta Maggiore and the building of Eumachia at Pompeii. But there is now sufficient material available for a comprehensive study of the history of apses throughout antiquity.

The *graffiti* on the stuccoed walls of the hall which has been identified as the Basilica Argen-

between the true and the false Aventine, with far-reaching results for the appearance of all this part of the city.

The construction of the Via dell' Impero and the Via dei Trionfi has attracted attention to several of the well-known monuments which they pass. The aspect now assumed in their new setting by the arch of Constantine and some of its neighbors will appear from Figure 6. The grandiose temple of Venus and Rome, that masterpiece of the imperial architect Hadrian, restored by



FIG. 2.—VIEW FROM NORTHEAST CORNER OF MONUMENT TO VICTOR EMMANUEL II, LOOKING ALONG VIA DELL' IMPERO TOWARD COLOSSEUM. IN LEFT FOREGROUND, FORUM OF CAESAR; TO RIGHT, TEMPLE OF CASTOR AND PALATINE

(Courtesy of R. Davico)

taria, to the southwest of Caesar's forum, are noteworthy for their Virgilian reminiscences (Fig. 4). The enormous excavations incident to the construction of the Via dell' Impero have yielded a number of admirable works of art (Fig. 5).

Further progress is to be recorded in the transformation of the center of ancient Rome, which has been necessitated by the growth of the modern city. The means of rapid communication between the northern and southern quarters have been amplified by the creation of the Via dei Trionfi in the valley between the Palatine and Caelian, and the widening of the Viale Aventino,

Maxentius, will resume something of its old distinction with the re-erection of a number of the monolith shafts of granite which formed the colonnades delimiting towards the Sacra Via and the Oppian respectively the enormous artificial platform upon the middle of which the temple stood. Opinion at present seems to be tending in favor of the view that the two ends of the area, toward the Roman Forum and the Colosseum respectively, were not provided with colonnades; but as to this and many other still problematic details associated with the temple of Venus and Rome we shall probably soon be better informed,

with the execution of the plans for a systematic investigation of the existing remains.

A place in this report is merited by the proclamation on the part of the *Governatorato di Roma* of the architects' competition for the auditorium which is to occupy the space near the

ological area; and (3) the transfer to these new and more adequate surroundings of the concerts that for a quarter of a century have been held in the concert-hall which at present lies over the Mausoleum of Augustus will constitute another step toward the complete liberation and systema-

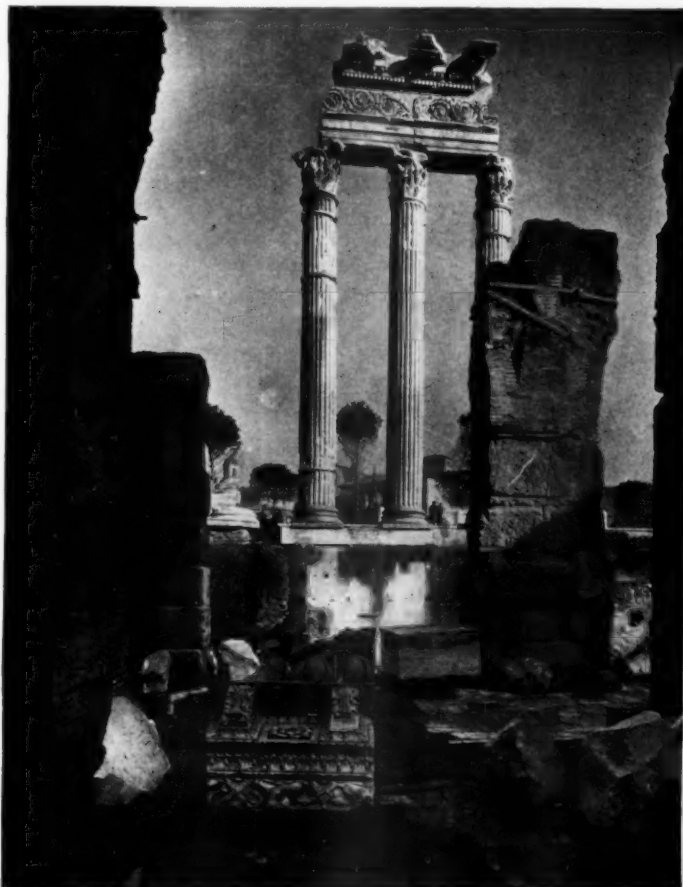


FIG. 3.—RESTORED ORDER OF TEMPLE OF VENUS GENETRIX, FROM SOUTHWEST  
(Courtesy of Dr. A. M. Colini)

Porta Capena, on the lower slopes of the false Aventine between the Viale Guido Baccelli and the Viale Aventino. The construction of this edifice is of interest to archaeologists because (1) the preliminary excavations may be expected to yield results of topographical and artistic significance; (2) the building when completed should enhance the architectural dignity of this archae-

tization of that venerable monument itself: an important feature in the plans for celebrating the Augustan Bimillennium.

The existence of a triumphal arch, generally identified with the *arcus novus* of Diocletian, at a point near the southern extremity of the ancient Via Flaminia, has been known since Renaissance times, when some of its details were discovered

in connection with the restoration of the Church of Santa Maria in the Via Lata: a fragment of a relief which was found at that time is preserved in

dei SS. Apostoli, at the angle of the Corso Umberto Primo, of a heap of worked blocks of marble clearly belonging to a triumphal arch, presumably



FIG. 4.—*Graffiti* in Basilica Argentaria, including Virgil's Epitaph, Mantvamegen—  
(From *Bull. Arch. Com. LXI*, 1933 (1934), by Courtesy of Dr. A. M. Colini)

the Villa Medici. The question of the date of this arch and its architectural details has been opened afresh through the discovery, in the early days of last December, in the course of work on the Via

the same monument from which came the earlier finds. These blocks lay above the ancient pavement, and at a depth of some fifteen feet below the present street level. Some are plain, but others in-

clude portions of a vaulted passage with its coffers and impost moulding; a capital of a Corinthian pilaster; and two bas-reliefs, one of them showing a portion of the wings of a Victory and the other a male head wreathed with laurel, clearly part of a historical representation; a fragment, perhaps from a frieze representing a group of women performing a religious ceremony; and a fragment with a festoon of laurel hanging from a candelabrum. The workmanship suggests the first or at the latest the beginning of the second century A.D.

Developments of exceptional interest are to be reported from the "Zona Argentina" of Rome—near the Circus Flaminius—where, as is well known, a sacred area enclosed by porticoes and containing three rectangular temples and a circular shrine was uncovered a few years ago. In the Summer of 1933, Dr. Giuseppe Marchetti-Longhi, whose name is honorably associated with the interpretation and exploration of these monuments, was able to accomplish what he, in common with others, had long felt essential, namely a methodical investigation of the lowest strata under and about the temples. He was fortunate in the scientific collaboration of Dr. A. M. Colini and the technical assistance of Dr. M. Barossa, both of the *Governatorato di Roma*. In a memorable communication presented by Dr. Marchetti-Longhi at the meeting of the Pontifical Roman Academy of Archaeology on March 22 of this year, the results were presented for the first time in public; before these lines appear they are to be printed in another installment of the excavator's official reports in the *Bullettino Archeologico Comunale*. The successive layers of the pavement of the whole area have been distinguished with greater precision; progress has been made in identifying the bounds enclosing the area; five distinct strata of occupation have been determined, almost every transformation being marked by a new pavement at a higher level; and it has been found that the space in front of each individual temple had its own enclosing wall and its own altar in the area thus reserved for the cult. The whole precinct, as was already known, received a pavement of travertine under the early empire, in connection with a general raising of level; beneath this was the tufa pavement, probably of the age of Sulla, which is to be associated with the three northernmost edifices, A, B and C, as they appeared in the last period of the republic; temple D was built under the empire. But it now appears that there was a still earlier pavement of tufa, and

that not only temple C, which had already been recognized as the earliest in date of the group, but also temple A, incorporate in their foundations the remains of two periods of republican construction. Especial attention was devoted to the investigation of the altars in front of the temples, and here again the results were of great importance: for both temple A and temple C had, at a low level,

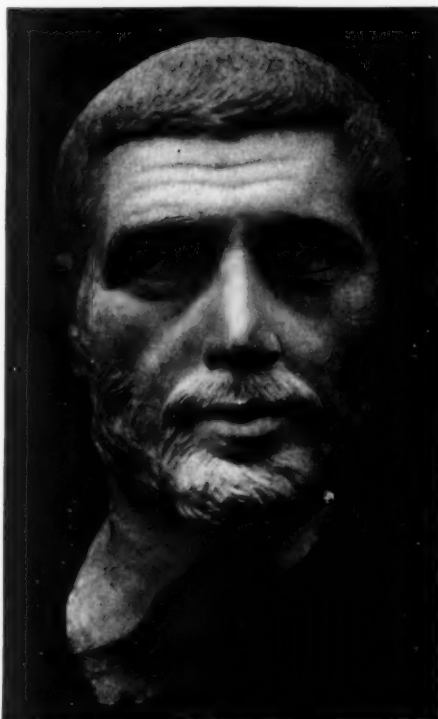


FIG. 5.—HEAD FROM THE VIA DELL' IMPERO,  
MIDDLE THIRD CENTURY A.D.

(From *Bull. Arch. Com.*, by Courtesy of Dr. Colini)

altars of republican form; that in front of temple A was incompletely preserved, its upper part having been detached and re-used; but the altar of temple C was found in admirable preservation (Fig. 7). It is oblong, not square, but in most other respects it appears a counterpart to the well-known altar of Verminus. *C.I.L.* I, 2d ed., 804; its inscription records a restoration of the altar by a duovir A. Postumius Albinus, and here too there is mention of a Lex Plactoria. As to the question which is foremost in the minds of students of Roman religion and topography, namely





FIG. 6.—VIA DEI TRIONFI, LOOKING NORTH TOWARD ARCH OF CONSTANTINE AND COLOSSEUM  
(Courtesy of R. Davico)

the identity of the cult, the stone maintains complete silence. Dr. Marchetti-Longhi's publication will constitute a contribution of prime importance to the material available for that obscure period of Rome's monumental history, the last three centuries of the Republic.

Another familiar Roman monument has gained

in impressiveness as the result of the demolition of modern structures and the restoration of old ones: for the newly isolated Mausoleum of Hadrian was formally inaugurated on the 21st of April of this year (Fig. 8). While the eye is perhaps first attracted by the bastions which owed their origin to the military engineers of the Renaissance, who at

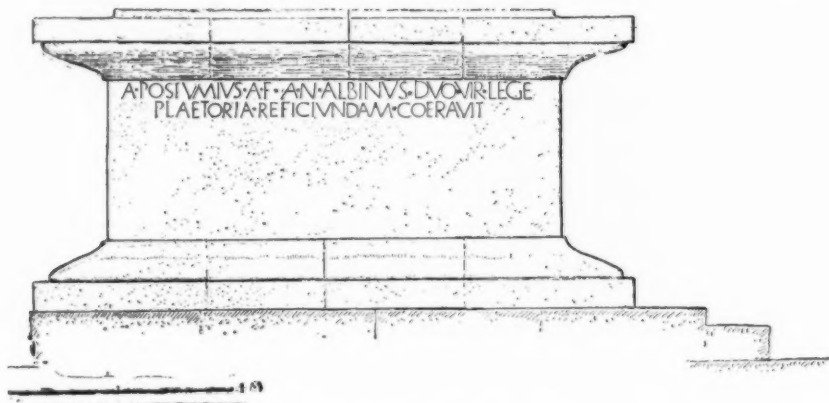


FIG. 7.—ALTAR OF TEMPLE C AT LARGO ARGENTINA  
(From *Bull. Arch. Com.*, by Courtesy of Dr. Colini)



FIG. 8.—MAUSOLEUM OF HADRIAN IN 1934, FROM NORTHWEST  
(Courtesy of R. Davico)

the command of the Popes converted the gigantic tomb into a strong fortress, at the same time the essential lines of Hadrian's own creation are more clearly revealed today than at any previous moment in the history of modern Rome. It would be possible to proceed still further in the task of

eliminating the late accretions to the Hadrianeum; and there is in fact discussion at present concerning the advisability of transferring to more suitable quarters a portion at least of the somewhat heterogeneous collections of various periods which are now displayed on these premises.



FIG. 9.—LATE CLASSICAL SUPPORT FOR WEATHER-VANE FROM VIA DELLA MARMORATA, ROME.  
THE SIXTEEN WINDS ARE REPRESENTED  
(From *Bull. Arch. Com.*, by Courtesy of Dr. Colini)

Among the sporadic objects which the incessant building operations of the Capital bring to light, few have been so quaint as the support for a weathervane reproduced in Figure 9, with its testimony to the survival of weather lore at the close of the classical era.

The Museo dell' Impero has expanded so that now, together with the Museo di Roma, it occupies all of the large edifice at the northwest end of the Circus Maximus. It will form an important element in the celebration of the Augustan Bimillennium, which is to include an exhibition of reproductions of Augustan monuments and other records of Roman greatness. The objects destined

heritage. The inauguration is fixed for September 23, A.D. 1937 (year XV of the Fascist Era). There are to be plaster models of the reconstructed Forum of Augustus, the Claudian and Trajanic ports of Ostia with the Isola Sacra and the mouths of the Tiber; also of Hadrian's Tiburtine villa; of a long series of triumphal arches in various parts of the empire, and of bridges and other outstanding monuments of architecture and engineering; likewise, of such characteristic theaters as those at Dugga and Aspendus. There will be casts of many significant works of art in the museums of Italy and other lands, including portraits of Julius Caesar, Augustus and other historical personages;

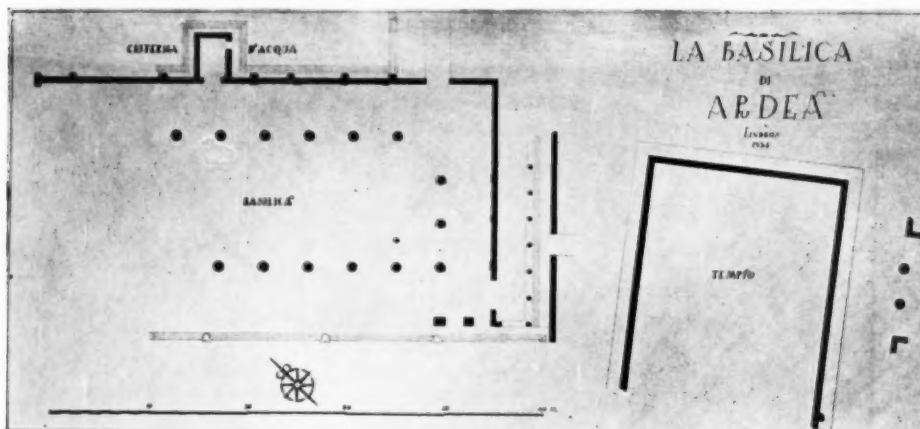
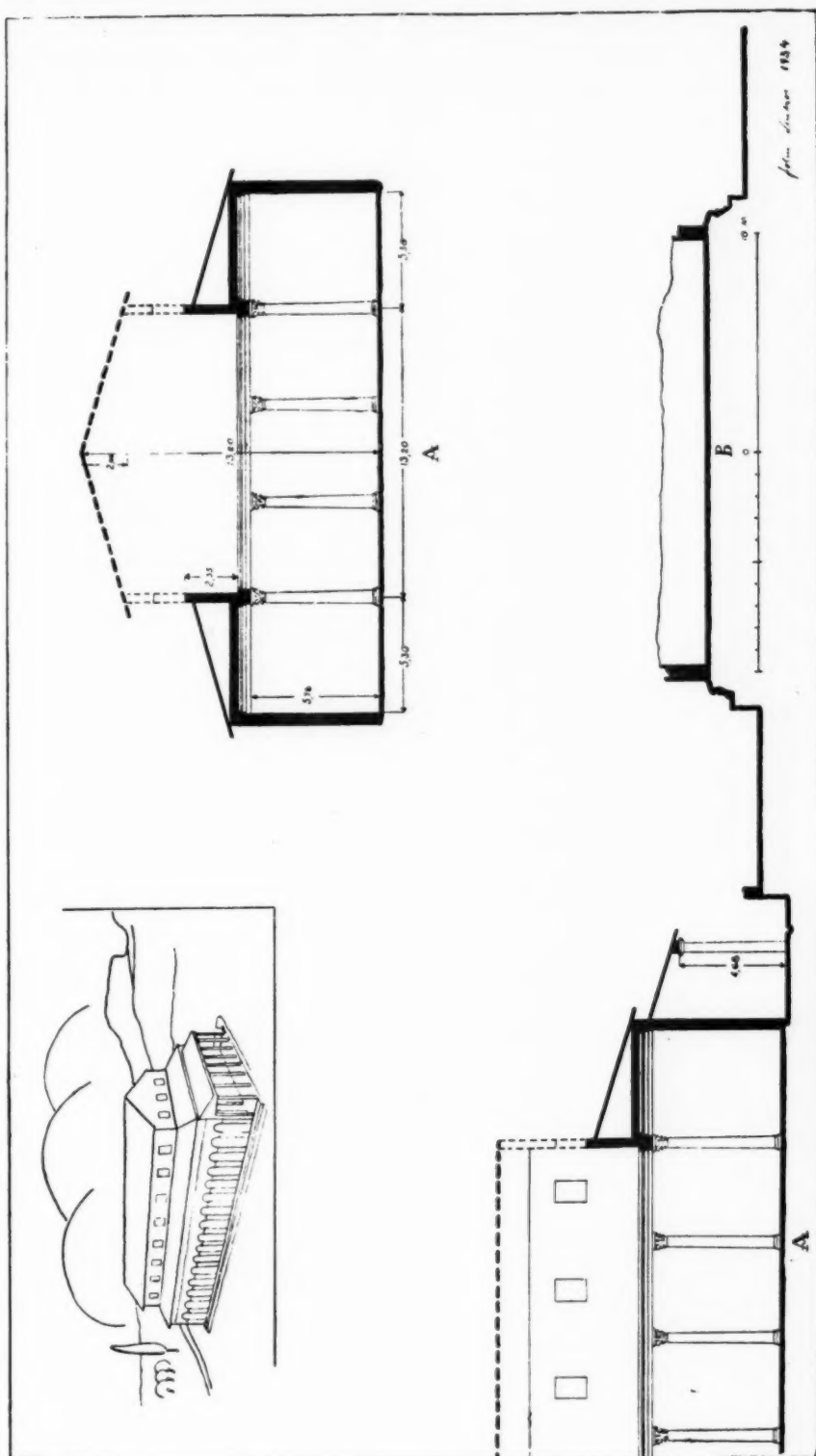


FIG. 10.—ARDEA. SANCTUARY ON THE *Civitavecchia*. PLAN OF BASILICA AND TEMPLE.  
BY JOHN LINDROS

(Courtesy of International Mediterranean Research Association)

for this exhibition have already begun to arrive from all parts of the Roman world, and are receiving the careful attention of the Director, Commendatore Giglioli, and his capable staff. Much interest has also been aroused by the temporary exhibit of the designs by Professor Gustave Ubbenstein of Paris, illustrating the laws of composition and proportion which this investigator finds to be embodied in the Roman triumphal monuments. But to return to the Augustan exhibition. The programme of this vast undertaking, "*La Mostra Augusta della Romanità*," and Commendatore Giglioli's statement of what has already been accomplished or is well in hand, may be resumed here. The initiative of the Italian State is meeting with a ready response from the other nations which are joint heirs of the Roman

and copies of objects testifying to the progress of the Roman arms and the Romanization of the provinces, including the treasure of Hildesheim. A special feature will consist of the "*Gipsoteca Numismatica*," a collection of casts and galvanoplastic reproductions of coins: this should prove an invaluable supplement to the numismatic cabinet of the Italian State, which is established at the Baths of Diocletian. There will be a section devoted to arts and crafts, and one for technology. There are now being arranged the series of ancient representations of ships, the special library, and the photographic collection with the general card index. All this material, with the other exhibits already installed in the Museo dell' Impero, is to serve as a permanent collection after the end of the year of celebration: the result will be a center



of Roman studies for which a future of great usefulness is assured.

The already long chronicle of the restoration of the early Roman churches has received still another chapter owing to the devotion and skill of

tions from the Old and New Testaments which adorn the nave of Santa Maria Maggiore. This latter church has finally revealed the vestiges of its ancient apse, which rested against the triumphal arch.



FIG. 12.—HERCULANEUM. TABERNA AND HOUSES ON CARDO V  
(Courtesy of Commendatore A. Maiuri)

the Dominican brothers attached to the Church of Santa Sabina on the Aventine. The famous carved door of cedar wood, a priceless relic of the art of the fifth century, has been thoroughly cleaned, so that now all its details can be properly observed—a worthy counterpart in miniature and monochrome to the cycle of colored mosaic representa-

The cemetery of the Isola Sacra at the mouth of the Tiber has been mentioned in previous reports. Its rich harvest of inscriptions forms the subject of detailed study on the part of the fortunate and learned excavator, Professor Guido Calza: his publication when it appears will be warmly welcomed by epigraphists and historians. The in-



scriptions are about two hundred in number, in Latin, with the exception of a few which are in Greek; they were generally set into the front walls of masonry tombs; they are pagan except for two or three Christian ones; they commemorate persons in the humbler walks of life, chiefly freedmen

The kindness of Dr. Axel Boëthius, Director of the Swedish Archaeological Institute in Rome, and of the International Association of Mediterranean Studies, has made it possible in previous reports (*A.J.A.* XXXVI, 1932, pp. 363-365; XXXVII, 1933, pp. 503-505) to present an il-



FIG. 13.—POMPEII. "HOUSE OF THE LOVERS." (Reg. I, Ins. x, No. 11)

(Courtesy of Commendatore Maiuri)

and slaves, many of them of Eastern origin and associated with various trades and professions. Linguistic and palaeographical interest is not lacking in these tombstones, and the conventional formulae which characterize them do not entirely obscure the human interest.

lustrated account of the first two seasons of the systematic exploration of Ardea, an excavation which Dr. Boëthius planned in coöperation with the Italian archaeological authorities and the Association. During the past season this important undertaking has been carried a stage further

by Dr. Boëthius, his assistant Mag. Phil. Erik Wikén, and their architect Mr. John Lindros. As is shown in the accompanying Figures 10 and 11, the investigation of the *Civitavecchia* sanctuary is now completed, and the result is of great interest for our knowledge of a typical cult center during the later centuries of the Roman Republic: the temple itself, with the basilica and other appurtenances for the accommodation of pilgrims. The most important discovery, the basilica, which dates about 100 B.C. and consequently is one of the two oldest extant specimens of its type, is published by Wikén in the *Bollettino* of the International Mediterranean Research Association for 1934.

With this we leave Latium. The cumulative results of Commendatore Maiuri's campaigns of exploration in the Phlegrean Fields are accessible in his small but richly illustrated guide-book in the official series, *Itinerari dei Musei e Monumenti d'Italia*. The most recent activities of the *Soprintendenza* of Campania and Molise include the excavation of a Roman temple, a basilica and a theater at Liternum, the coast town in the north-west corner of Campania which the aged Scipio chose for his retirement. Here have been found a statue of Faustina and a replica of the Ephesian Artemis. The work continues.

The great undertaking at Herculaneum steadily develops. Insula V has been entirely laid bare, with a group of fine houses and shops (Fig. 12), including a *taberna* with its equipment completely preserved. A splendid wall mosaic excites special admiration.

The importance of Pompeii shows no sign of diminution. The entire Insula X of Regio I has been uncovered, and the "House of the Lovers" (I, x, 11), near the "House of the Menander," has its special appeal (Fig. 13), for it is here that the visitor can read the words, "Lovers, like bees, live a honeyed life." On which sentiment one of our predecessors, who visited the house in the period before the great eruption of Vesuvius, saw fit to add his own comment, which in the probable interpretation of Cavaliere Della Corte runs: "Lovers! People who need to be cured!"

Another villa has been found on the Stabian hills, and a grandiose establishment of the kind dating from the Flavian period with large garden enclosed by quadriporticus has come to light at Minori. Meanwhile, the famous villa of Tiberius on the island of Capri has been partially excavated and restored (Fig. 14).

As we proceed further south we come to the river Silarus, and it is here that the *Associazione Magna Graecia* has found the remains of a sanctuary, perhaps dedicated to Argive Hera, with some three thousand votive terracottas of the Hellenistic period. The important developments at Paestum include the isolation and restoration of a Roman bridge. And valuable light is being thrown on the indigenous population of Southern Italy by the finding of Samnite burial-grounds at Benevento and San Salvatore Telesino.

And now two items of news from the North. An unusual discovery has been announced in the press, from the Province of Forlì. On the right bank of the river Salso, near Fratte, four meters below the level of the highway, the burial-place of a Vestal has been discovered. The monument is stated to have remained perfectly preserved after the lapse of centuries, to consist entirely of "travertine," and to rest on a base with five steps. There is mention of inscriptions giving the name of the Vestal as well as her metrical *elogium*. The sarcophagus is described as "a masterpiece of the art of ancient Rome."

The famous "Trophy of the Alps" of Augustus must not pass without mention here, even though La Turbie lies within the frontier of modern France. The injuries which time and the hand of man had inflicted on this unique topographical and historical landmark have to some extent been healed through the thoughtful generosity of an American benefactor, Mr. Edward Tuck, who has restored the monument at his own expense.

The kindness of Dr. Paolino Mingazzini, the newly-appointed Director of the Palermo Museum, enables me to communicate some information concerning discoveries in Western Sicily. Near Marsala, in the waters of the great lagoon, facing the island of Motya, which as is well known was in early times an important trading post of the Phoenicians, there was found in July, 1933, a torso of local stone, lacking the head and the legs from a point somewhat above the knee (Fig. 15). The person represented held in his right hand, which is attached to the body, a scepter or some similar object; his left hand rests against his breast. He wears a short garment about his flanks. This form of drapery, together with the characteristic attitude, suggests a derivation from Eastern prototypes, hence the hypothesis that this is a Phoenician work of the middle of the fifth century B.C.



FIG. 14.—CAPRI. VILLA OF TIBERIUS  
(Courtesy of Commendatore Maiuri)

At Mazara del Vallo, near the Church of San Nicolicchio, there has come to light a room, which evidently belonged to a Roman house, adorned with a mosaic in geometrical designs: this has been published by Bonanno, *La Romanità di Mazara*, pages 80-83, Figure on page 88. The indigenous culture of this end of the island is represented by the discovery in the territory of the commune of

Partanna, near the Torre dei Bigini, of a Sikel tomb of considerable size: a small portion of the fictile material which it contained has been taken to the Palermo Museum.

The Italian possessions in Africa have been conspicuous in archaeological literature during recent years. On the present occasion the finding is to be recorded at Lepcis Magna of a portrait statue of Claudius in an almost perfect state of preservation: the Emperor is enthroned, holding in his right hand a globe on which is perched an eagle; his left hand is lost, but there are traces which show that it held a lituus.

The history of the great princely collections of Italy has an importance for our studies. The recent approval of the convention which had been concluded between the Italian State and the Princes Barberini and Corsini with regard to the artistic patrimony of the Barberini house concerns chiefly the field of Renaissance art; but it may be of interest to record here that a certain number of classical antiquities have, as a result of this convention, become the absolute property of the above mentioned Princes, with freedom to export. The famous and unique representation in painting of the Goddess Roma has been generously presented to the Head of the Government by the Barberini.

A. W. VAN BUREN

AMERICAN ACADEMY IN ROME

June, 1934



FIG. 15.—STATUE FROM LAGOON NEAR MOTYA  
(Courtesy of Dr. P. Mingazzini)

## BOOK REVIEWS

ÖLAND UNDER ÄLDRE JÄRNÅLDERN, by *Mårten Stenberger*. Pp. viii + 306, pls. 2, figs. in text 18. Stockholm, Akademiens Förlag, 1933. Kr. 15.

This is a well illustrated and handsomely published work dealing in a comprehensive way with the remains of the Early Iron Age found on Öland, one of the two large islands off the east coast of Sweden. The credit for bringing to light much of the material here discussed belongs to the author himself who has conducted explorations and excavations about the island over a period of nine years from 1924 to 1933; but the researches of others have also been adequately summarized and evaluated. The work is divided into three parts, the first dealing with tombs and burial customs, the second with remains of houses and settlements, the third with a series of fifteen fortified strongholds which apparently provided a place of refuge to the surrounding population in times of danger.

The graves of the pre-Roman Iron Age (in his division of periods the author follows the system elaborated by Montelius) all show the custom of burning the dead. With the Roman period inhumation becomes common, although the older custom survives to some extent. The period of folk migrations from the fifth century onward, evidently one of decline on the island, is only scantily represented by tombs; but in the Viking Age new and prosperous settlements are again indicated.

Remains of houses are very numerous, and the most notable type is a long, roughly rectangular building, with low but thick stone walls, and with one or two entrances, either on the long sides or at the ends. In all houses holes for wooden posts have been found, usually arranged in two rows parallel to the walls; and there is a hearth made of stone slabs or of clay. The houses occur either singly or in small or larger groups. All seem to have been destroyed by fire about 500 A.D., and their construction must go back to the late or early Roman Iron Age. The type is quite different from that of the circular and oval buildings of the Stone and Bronze Ages; and from a careful study of analogies elsewhere Stenberger thinks its origin is to be sought in Denmark and western Europe.

The fortified strongholds were built with massive encircling walls of stone; and they seem to

have enclosed numerous small houses. The most remarkable example is that at Ismantorp, where the foundations of eighty-eight such houses were brought to light. Most of these fortresses appear to have been constructed in the period of migrations, presumably at the time when the rectangular houses were destroyed, although some are probably as late as the Viking Age.

Stenberger's treatise is a careful and thorough study; its conclusions are based on painstaking and discriminating research, and altogether it is an admirable monograph in its field. It is written in Swedish, but a brief summary in German is appended; and there are also some useful tables listing all known remains of prehistoric houses on the island, all Roman soldi that have been recovered, all gold objects from the earlier stage of the period of migrations, and all datable objects belonging to the Iron Age, the finding place of which is known. The numerous illustrations in the book deserve particular commendation, and among them the many views of houses and fortresses taken from the air are especially noteworthy.

CARL W. BLEGEN

UNIVERSITY OF CINCINNATI

A LA RECHERCHE D'ITHAQUE ET DE TROIE, by *Georges Seure*. Pp. 125, 2 maps, 1 Fig. in text. Paris, Geuthner, 1933. 30 frs.

In this well written, not to say eloquent, monograph in the pure academic manner the author first lays down a number of general guiding principles and then conducts his arguments within the rather narrow limits thus defined. His chief canon (and perhaps his chief fallacy) is that all problems of Homeric topography must be settled by the evidence which Homer himself provides; and following this principle strictly he comes (as might be expected) to the negative conclusion that neither Troy nor Ithaca, as conceived by the poet, has yet been correctly identified on the archaeological side. Indeed in a moment of pessimism he expresses the fear that both sites may have been merely creations of a poetic imagination and that they may consequently never have existed in actuality. His final view is, however, that Troy did exist somewhere in the northwestern corner of Asia Minor, but not at Hissarlik; and that Ithaca



is to be recognized in the island of Thiaki, although no certain remains of the city and the palace have yet been brought to light.

M. Seure specifically warns us against demanding too much in the way of accurate topographical information from a poet; nevertheless he treats Homer essentially as a Guide Bleu or a Baedeker, and he even intimates that the poet wrote of Troy from his own personal "autopsy." If such were the case, Homer would appear in this respect to have an advantage over Mr. Seure, for there is no evidence in the monograph to indicate that the author has ever seen the sites about which he writes: his discussion is based entirely on his industrious study of Homer and of modern publications. The work is well documented, and I think its value lies in its collection and survey of what has previously been written, its elimination of some theories and speculations, and its restatement of the problems. But the lack of first-hand topographical knowledge and understanding of the regions in question is a fatal weakness in a work of this kind, which seems to me to mark little if any progress of a constructive character toward a real solution of the problems involved.

CARL W. BLEGEN

UNIVERSITY OF CINCINNATI

PROTOKORINTHISCHE VASENMALEREI, by H. G. G. Payne. Pp. 24, plates 32. Berlin: Heinrich Keller, 1933. RM. 32.

To *Bilder Griechischer Vasen*, the excellent series published by Mr. Beazley and Herr Jacobsthal, Mr. Payne has added a brief study of the Protocorinthian style which should be of great importance to the student of Greek pottery. Wisely avoiding, on account of the brevity of the volume (the text proper consists of only eleven pages), any detailed discussion of the various problems connected with the style, the author picks his way through the Protocorinthian maze with practised skill. The result is a concise, well-balanced review of the chronological and stylistic development of Corinthian vase painting from the eighth century to about 625 B.C., with brief but adequate treatment of the causes and influences leading to successive changes in style.

Beginning with a few remarks on Corinthian geometric pottery and contrasting it, perhaps a shade too disparagingly, with that of Athens, the author proceeds, apparently with relief, to the Orientalizing style. This had a rapid development in Corinth under the pressure of influences from

the East, transmitted through Crete. Here he points out the newly acquired ability to draw free hand, to invent new motives, and to arrange them most effectively on the surface of the vase. The modification, and occasional abandoning, of the geometric principle of strict axial symmetry mark another advance. In the seventh century first appears the silhouette with incised detail, a mode of drawing destined to dominate Corinthian art for nearly two centuries; and the miniature style emerges, with its new interest in the human figure and in narrative. With a well considered appreciation of the exquisite drawing of the Berlin aryballos and the Macmillan vase, the author leaves the miniature group for the late Protocorinthian period, illustrating the late narrative style by the justly famous Chigi vase, truly a marvel of drawing. From the narrative he returns to the true Orientalizing style, with its absorbing interest in the animal frieze which determines the trend of vase painting for the next century. The text ends with a most interesting and valuable discussion of the character of Protocorinthian drawing, admirably pointed by a comparison with Rhodian, the vase group nearest in appearance, though furthest in spirit. In Rhodian painting the line is merely a means to an end, not of interest in itself; the beauty of Protocorinthian drawing depends on two opposing forces—the analytic, which inspires a close study of structure, and the synthetic, which is expressed in the marvellous successions of rhythmic curves characterizing the magnificent British Museum kotyle, the Aigina fragments, and many others.

As this brief account of the subject matter shows, *Protokorinthische Vasenmalerei* is far from being merely a résumé of *Necrocorinthia*. Here, for example, we have the exposition of a period which did not come within the scope of *Necrocorinthia*—the Corinthian geometric and late geometric. The interesting and well reasoned analyses of the differences between Protocorinthian and Rhodian vase painting, and between the Attic and the Protocorinthian miniature styles, are important additions. The chief value of the book, however, lies in the careful evaluation of Protocorinthian vases as artistic products and as factors in the development of vase painting.

The translation has been most carefully done by Herr Kraiker of the German Institute. Any translation, however good, must of necessity lose for us much of the charm of Mr. Payne's own English style. Abstractions do not translate readily; and in

this essay perhaps more than in his previous writings one is struck by the unusual clearness of thought, the imagination and the accurate use of words which the author brings to his discussions of such personal and intangible things as style.

In appearance the volume, like the others of the same series, is most attractive and the type good. A few typographical errors, mostly in the catalogue, are trivial. There is a refreshing sparseness of footnotes, many details being wisely excluded from the text and relegated to the combined catalogue and bibliography which explains the illustrated vases. The plates, which, as Mr. Payne puts it, form the excuse for another book on Corinthian pottery, cannot be too highly praised. They are well selected and beautifully reproduced. At least one vase, the fine oinochoe in Toulouse (Pl. XII) is here published, as far as I know, for the first time. Several fragments from Mr. Payne's excavations at Perachora also make their debut here. A number of the author's own charming drawings are represented, the following apparently new (Plates 10,1; 11,1; 14,1; 21; 24,2; 30,4).

AGNES NEWHALL STILLWELL

AMERICAN SCHOOL  
Athens

ATTIC VASE PAINTING (Martin Classical Lectures, Volume III), by *Charles T. Seltman*. Pp. xxii + 97, pls. 37, figs. 17. Cambridge, Harvard University Press, 1933. \$1.50.

This book can be recommended to American readers as the best appetizer for its subject; essentially sound, most adroit and piquant, yet sober in style and tone, it popularizes very successfully the newest knowledge, especially the connoisseurship of Beazley and his critical judgments. It will stimulate the specialist, not only the beginner: sometimes, perhaps, by irritation, as when the decline of Attic vase painting is attributed chiefly to political immorality. Mr. Seltman does well to remind us that the taste of the Greeks in conduct had something to do with their taste in art; but a cloud seems to come between the author and his subject when he declares that the red-figured style decayed because Athens forgot "that a free democracy must not, dare not, play the tyrant to other intellectually equal free democracies." The Niobid Painter, in whom degeneracy appears, is "imperialistic"; the untainted Achilles Painter, "aloof from the Periclean jingoism of his time"! What sin caused an earlier

decadence, the effete and slovenly black-figure of the time of the Persian wars? Did these painters privately Medize?

But Mr. Seltman immediately descends from his high ground to give a very just and telling account of the "adverse circumstances other than political and moral" and can find a good word to say of the drawing of the Meidias Painter and of the skill, such as it is, of Aristophanes. If he is unjust to the late fifth century, it is by omission; the Eretria and the Dinos Painters, the Quadratmeister and the Frauenmeister would have brightened the picture: they are left out of it. More serious is a certain disregard, throughout, of the decorative and subordinate purpose of vase painting; once or twice this combines with the author's moralizing bias in a judgment that seems too abstract, as when he fixes the highest point of vase painting by the "Olympianism" of the Pistoxenos Painter. Certainly, the half-truth "the vase was the drawing paper of the Attic artist" is a good starting point—for the lecturer on vases has to fight his pupils' disdain of "the pots and pans"—but insistent qualification must follow, if the student is not to prefer Reichhold to the vase painters.

The illustrations, necessarily small, are well chosen. The bibliography is soundly concise; but there was room for Jacobsthal's *Ornamente griechischer Vasen*. For the second last item Langlotz' *Zeitbestimmung* might have been substituted. On page 87 of the text I find no reference to Miss Moon's study of Italiote vases.

It is no mere compliment to prophesy a second edition of this brilliant and useful book. When that appears, it will take account of some very important works published since Mr. Seltman sent his manuscript to press, Langlotz' *Griechische Vasen in Würzburg*, Miss Richter's *Lydos*, and Miss Roes' books on Geometric (most formidable to the theory of Dorian origin which our author cautiously embraces).

H. R. W. SMITH

UNIVERSITY OF CALIFORNIA

COLLECTIONS DE CÉRAMIQUE GRECQUE EN ITALIE. Tome II, by *Hubert Philippart*. (Fondation Archéologique de l'Université de Bruxelles.) Pp. 145, pls. 13, figs. in text 9. Paris, "Les Belles Lettres," 1933. 25 fr.

Part I of Professor Philippart's second volume with this title is devoted to collections in Southern Italy, with particular emphasis on the red-figure

vases manufactured in the region; Part II to museums in Central and Northern Italy, and here the number of Attic vases is proportionately greater. The collections included are: in Part I, the Museo Jatta at Ruvo; the Caputi Collection from Ruvo, now at Rome; the Museo Provinciale at Bari; the Museo Civico at Brindisi; the Museo Civico and the Museo Provinciale Castromediano at Lecce; the Museo Nazionale at Taranto; the Museo Nazionale at Naples (here no vases are described, but reference is made to forthcoming fascicules of the *Corpus Vasorum Antiquorum*); the Spinelli Collection at Cancelli-Suessula; the Museo Campano at Capua; in Part II, the vases from Comacchio in Bologna; the Museo Archeologico at Arezzo; the Museo Civico and the Museo Faina at Orvieto; the Museo Nazionale at Corneto-Tarquini; the Antiquarium Comunale, the Museo Artistico Industriale and the Museo Barracco at Rome.

Under each museum the author notes published catalogues if they exist and periodical literature which deals with the collection. He then singles out for description those vases which seem to him interesting and important by reason of their style, their painters or their subject-matter; he makes no attempt to describe or even to list every Greek vase in the collection. His chief concern is with Attic black-figure and Attic and South Italian red-figure; reference, however, is made to Protocorinthian and Corinthian vases which have been discussed by Johansen and Payne, to a few Pontic amphorae mentioned in Ducati's *Pontische Vasen*, and once to a group of Laconian cups; black-glaze vases are occasionally noted in passing.

The recently reawakened interest in early South Italian vase-painting makes the first part of the book particularly welcome. In the introductory pages the author characterizes the style briefly, gives résumés of the earlier discussions of the subject, and outlines the classifications advanced by Tillyard and Miss Moon. His use of the hybrid term "attico-italiote" for the first products of the South Italian workshops will be deplored by many.

Professor Philippart seems to have examined personally all of the vases he describes. He corrects a number of errors in previous publications and notes restorations and repaintings; often he furnishes measurements; frequently he gives facsimile drawings of inscriptions, though sometimes only transcriptions. The thirteen plates provide illustrations of a number of hitherto unpublished vases, mostly Attic red-figure. It is

unfortunate that the majority of the half-tones are on too small a scale or too blurred to be of much value for stylistic study. A larger and clearer reproduction of the oinochoe (Pl. III, 2) is to be found in Hahland, *Vasen um Meidias* (Pl. XX), to which no reference is made in Philippart's text; the oinochoe Brussels R 228, mentioned in connection with the one in Bari, is figured on Pl. XV b of Hahland's monograph.

A number of new attributions are suggested, and some old ones questioned. In the conclusion, the decline of the red-figure style in South Italy is laid to mass production resulting from the attempts of local ateliers to imitate and undersell imports from Athens. The persistence of types, in subject and composition, is stressed. There is a list of additions to Volume I and an index of proper names.

The foregoing paragraphs will indicate how much new and valuable material is to be found in the book. The task of assembling it must have been tremendous, and it is therefore all the more to be regretted that the author has allowed certain inconsistencies to escape his final revision of the text. In the hope that they may be of some use, the following corrections are suggested:

P. 25, line 4: for "p. 36" read "p. 37."

P. 33: a calyx-krater in the Caputi Collection, assigned by Watzinger to the group of Naples 2411, is included by Philippart under "style italiote," while the bell-krater, 345 in this collection, assigned by Watzinger to the same group, is placed under "style attico-italiote" on p. 31.

P. 49: a reference to Beazley, *J.H.S.* 49 (1929), p. 110 might be added in connection with the column-krater, Lecce 601.

P. 50: in classing this group of column-kraters under "style attico-italiote" Philippart carries on Romanelli's error in the text of *C.V.A. Lecce*, fasc. 1, of assuming that they were painted in Italy; see Beazley's correction in *J.H.S.* 49 (1929), p. 110.

Pp. 50-51: whether or not the author agrees with Beazley's attributions, more complete references to his reviews in *J.H.S.* 49 (1929), p. 110 and *J.H.S.* 51 (1931), p. 120, would be welcome in connection with this group of bell-kraters; in the second review 630 and 646 are said to be Attic.

P. 56: to the cup in Taranto signed by Thrax, add a reference to Beazley, *J.H.S.* 52 (1932), p. 189.

P. 61, lines 2-4: to the lekythoi, Nos. 2-3, add a reference to Beazley, *Der Berliner Maler*, p. 20, Nos. 160, 164.

Pp. 66-67: there is some confusion in the paragraph headed "Groupes de Pistici du Peintre d'Amykos." The lekythos, No. 1, and the kotyle, No. 8, though found at Pistici, are assigned by Beazley to Attic artists; for

No. 8 cf. *Attische Vasenmaler*, p. 367. In connection with the kalpis, No. 2, the reference to p. 341 of *Attische Vasenmaler* must be wrong, since the descriptions do not correspond; is not Philippart's kalpis No. 4 in Beazley's list of the Pisticii group, Tillyard, *The Hope Vases*, p. 10? The amphora, No. 6, is assigned to a group related to the painter of Hope 206 by Watzinger, *Furtwängler-Reichhold, Griechische Vasenmalerei*, III, p. 346, n. 8. One would be glad to know to which of the two groups the author attributes the kotyle, No. 7 and the bell-krater, No. 10.

P. 70, line 2: for "p. 36" read "p. 38."

P. 74, line 11: for "cep" read "sceptre?"

Pp. 75-76: in this group of "vases attiques tardifs et vases italiotes" the author does not say which are Attic and which Italiote.

P. 96, line 5: for "p. 395" read "p. 396."

If the name of the painter to whom a vase is attributed, as well as the page reference to *Attische Vasenmaler*, had been included in every case, instead of only occasionally, the book would be more useful to the traveling student who may not have his copy of Beazley's work at hand.

But these criticisms are not intended to minimize the excellence of the book. Such scholarly guides to unpublished collections are greatly needed, and it is to be hoped that Professor Philippart will give us more.

WILHELMINA VAN INGEN

UNIVERSITY OF MICHIGAN

GREEK SCULPTURE AND PAINTING, to the end of the Hellenistic Period, by J. D. Beazley and Bernard Ashmole. New York: The Macmillan Company; Cambridge, England, at the University Press. 1932. \$3.25.

The advance of archaeology both as an art and as a science has been considerable of late and the older handbooks have for some years been quite out of date. A short, readable account giving the familiar story from the new outlook was sorely needed and we are fortunate indeed to have it from the pens of two such distinguished scholars as J. D. Beazley and Bernard Ashmole. The book is a reprint, with revisions, of the chapters on Greek art scattered over several volumes of the Cambridge Ancient History; the earlier sections are by Beazley, those dealing with the Hellenistic period by Ashmole. The authors have not only taken cognizance of the important newly discovered material such as the bronze "Zeus" found off Cape Artemision, the archaic Kouros in New York, and the frescoes from the Villa Igem; but

they have incorporated the significant advances in our knowledge. Greek sculpture no longer begins with the Tenea Apollo; instead due emphasis is placed on seventh-century statuettes and statues which make clear the influence of Mesopotamia as well as of Egypt. "Sixth century" is no longer considered sufficient dating for archaic objects; instead specific assignments are made, showing the steady change and development, decade after decade, from the Sounion Apollo and the Nessos amphora, through the Moschophoros and the François vase, down to the Akropolis Maidens (many now placed at the very end of the century) and the vases by Euphronios. Above all, the history of Greek sculpture is no longer regarded as one of *crescendo* and *diminuendo* before and after the Periclean age, with the Parthenon as the one standard of measure; instead each period is appraised independently, "the overwhelming excellence" of the Olympia sculptures is recognized, without however disparaging the art of the Parthenon. Finally, order and meaning are brought into the complex trends of the Hellenistic age. Particularly interesting are of course the chapters on vase painting, the field in which Mr. Beazley's own researches have done so much to enlarge our understanding of Greek art.

The text is supplemented by 248 excellent illustrations, each with a caption giving subject, location, and date. Naturally among them are some attributions for which one would like to hear supporting arguments; for instance that of the admirable bronze statuette of a philosopher in New York, hitherto generally regarded as a Hellenistic original, but now called a Roman reduction of a third-century original. Evidence for such new assignments will doubtless be supplied elsewhere.

The book as a whole is a great achievement. In spite of the restricted compass (102 pages for a period of 1000 years) the authors have given us admirably clear, well-balanced, and authoritative accounts of the various epochs, in a style which is refreshingly free from artistic jargon. We may quote Beazley's happy description of fifth-century art as an example (p. 50): "The catchwords 'grace and refinement' are as appropriate to the art of the period of the Parthenon as to the Apollo of Sunium or Tricorpor. The bodily forms are rounder and easier than in the early classical period, but still extremely powerful and solid. The faces are broad and well-liking, the features are large, and the hair glows in strong, heavy un-



dulations. There is much sweetness not of face only but of body and attitude and gesture; but it is the sweetness of the strong." It is this concrete and yet imaginative outlook coupled with sound scholarship which give to this book a unique value in our archaeological literature.

GISELA M. A. RICHTER

METROPOLITAN MUSEUM OF ART  
New York

SYLLOGE NUMMORUM GRAECORUM. Published for the British Academy. Volume I, Part I (1931). Volume II, Part I-II (1933).

With the present rate of exchange sending books in German, French and Italian to prohibitive prices, there is considerable satisfaction in calling attention to a contrasting condition. A recent publication which should be in the hands of every serious student of Greek coins is the *Sylloge Nummorum Graecorum* which is being published under the auspices of the British Academy. The work of description and editing has been placed in the hands of Mr. E. S. G. Robinson, F. S. A., Assistant Keeper in the Department of Coins and Medals of the British Museum. His previous work on the British Museum Catalogue of Greek Coins for Cyrenaica is more than sufficient assurance of excellence for the *Sylloge*. The plates also leave little to be desired—they are sharp and clear; imprinting them with a slight tint adds greatly to their aesthetic appeal. Part I of Volume I and Parts I and II of Volume II have now appeared. The selling price has been made very little (if any) above cost and in consequence the publication is within the reach of everyone. Since the printing of further sections is in a measure dependent upon sales, support of this effort is to be recommended.

The program outlined involves the publication of other private collections in an effort to supplement the official catalogues which have done so much to stimulate interest in Greek coins. Several ideas seem to have been borrowed from the *Corpus Vasorum*. The first section issued catalogued the coins in the collection of Capt. E. G. Spencer-Churchill along with those from the Salting collection now in the Victoria and Albert Museum at South Kensington. Parts I and II of Volume II have been issued together and in them a beginning is made with the noteworthy collection of Dr. A. H. Lloyd and Miss Lloyd of Cambridge, which is carried through the series for Thurium.

The descriptions follow a simplified form. Since

each coin is illustrated, the listing of types and details which can be observed in the reproduction is eliminated. The record gives metal, weight and die positions, provenance where desirable, citation of earlier publications of individual pieces, and only in exceptional cases is there comment. By this means, expensive (and often only partially accurate) repetitions of inscriptions are omitted and lengthy duplications of statements regarding familiar types and dies are also obviated. References to such standard classifications as Evans' "Horsemen of Tarentum" further simplify the record. What we have then is the essential evidence, with controversy and extraneous discussion covered by reference. When the pieces are known to have come from significant hoards that circumstance is recorded.

If as a result of all this elimination the resultant page sometimes looks like a ledger there is room for error on the part of anyone who thinks that there is not food for deep thought in the evidence submitted. The coins themselves are the most important part of the record, and when some of them such as Nos. 18, 147, 176, 306 and 480 are probably unique one has still to remember that others such as Nos. 370, 376 and 390 rarely occur in such splendid condition. When, with No. 429 we observe an incuse piece of Poseidonia struck over a Metapontine stater one realizes another angle of approach to these marvelous records of a people who believed in making even the coins in daily use aesthetically stimulating.

It is to be hoped that this excellent example may find an echo in this country where there are a number of collections worthy of similar treatment. A small collection in the Metropolitan Museum has been published and the Warren collection, a large proportion of which is now in the Boston Museum of Fine Arts, had a careful catalogue in German prepared by Dr. Regling in 1906. The Boston cabinet, however, includes another section known as the Catherine Page Perkins collection, and acquisitions since 1906 have been fairly numerous, so that it is gratifying to learn that an adequate catalogue of the entire collection is being prepared by Mrs. Agnes Baldwin Brett. Let us trust that the example of the British Academy will be followed in this country and in other countries.

SYDNEY P. NOE

AMERICAN NUMISMATIC SOCIETY  
New York



EXCAVATIONS AT OLYNTHUS. PART VII. The Terra-cottas Found in 1931. *David M. Robinson*. Pp. XII + III, pls. 64 (3 in color). Baltimore: The Johns Hopkins Press, 1933. \$10.

The excavations at Olynthus have yielded to date more than 800 terracottas. The 411 discovered in 1931 are here carefully described and fully illustrated. A concise introductory statement, including mention of the more important pieces, is followed by systematic descriptions to which the author adds supplementary information out of his abundant knowledge of the germane literature. The terracottas are classified and arranged within groups in chronological sequence so that there results a ceramic history of Olynthus from the sixth century to the year 348 B.C. when the city was destroyed. The story is very interesting. All types of terracottas are represented. They come from house and grave, and reflect the changing moods of sculpture from the Pre-Persian *Korai* through the stately Phidian style to the satyrs and actors who announce the coming of Hellenistic license.

The reviewer selects the following as particularly interesting. Three sphinxes from graves of the late archaic period (Nos. 333-5) are probably not mere sepulchral furniture but, like the larger examples in stone set over graves, satisfied some mystic need through their relation to the cultus of Dionysus. A remarkable group of seven terracottas, six from graves, are more certainly mystic. They represent a youthful nude male, perhaps Eros, with a herm on the right. Here again the herm which at times was set upon a grave or represented in its stele is found, like the miniature sphinx, in a grave. Of sepulchral significance also must be the nine terracotta roosters (Pl. 42), eight of which were found in graves. Though of fifth century date, they recall to mind the cock of the archaic Spartan grave stele and of the Harpy tomb. The cock as a symbol of awakening was appropriately owed to Asclepius who raised the dead to life. The terracotta doves from the graves at Olynthus (Pl. 43) suggest that found in a grave at Sardis, although the latter is set upon a pomegranate. The silenus riding on an ithyphallic ass (No. 330) belongs in the train of the Dionysus who appears on the coins of Mende riding upon an ass. Some of these coins show an ithyphallic ass but without a rider (cf. S. P. Noe, *The Mende Hoard* in *Numismatic Notes and Monographs*, Pls. I-III). The sileni with cantharus and amphora who in weariness rest their right arms on their heads

(Nos. 323-326) are second cousins of the drunken Barberini Faun. But from these types one turns again to the finer terracottas of the fifth century (Pls. 9-12) which would be the more impressive in illustration if they had not suffered from the pernicious practice of the engraver who has reinforced the contours by inking. Dr. Robinson has rendered the double service of finding and publishing a highly suggestive ceramic anthology of the Olynthians.

GEORGE W. ELDERKIN

PRINCETON UNIVERSITY

OLD AGE AMONG THE ANCIENT GREEKS: THE GREEK PORTRAYAL OF OLD AGE IN LITERATURE, ART, AND INSCRIPTIONS, by *Bessie Ellen Richardson*. Pp. 391, 27 illus. Baltimore: The Johns Hopkins Press, 1933. \$4.00.

"Age is deformed, youth unkind  
We scorn their bodies, they our mind".

In Miss Richardson's interesting and valuable book on the Greek depiction of old age this "generation-war", as Aldous Huxley calls it, is fully illustrated both from Greek literature and Greek art. The author concludes that "the Greeks confined themselves quite largely to a delineation of the unfavorable side of the last years." Her earlier chapters discuss the physical effects of senescence, the mental and emotional endowments of old age, the duties and interests of the elderly citizen, and the attitude of the Greeks toward the aged. In the later chapters she writes of the idealization of youth and deathlessness, and personification of Geras (Old Age), the representation of old age in Greek vase painting, depictions of old age in sculpture at Olympia, on the Parthenon, Lycian monuments, and on sculptured reliefs. This discussion is followed by a study of old age portraiture in sculpture, terracottas, coins, gems and intaglios. Then come the aged silen and centaurs on vases and in other forms of art. The last chapters deal with remarkable examples of longevity among the Greeks, mentioned in literature and in sepulchral inscriptions, and with a calculation of the average duration of life among the Greeks based on inscriptional evidence.

The book presents the results of a thorough study of all the material. The value of having in one carefully prepared volume the many literary references and also the illustrations which accompany the discussion is obvious. Miss Richardson's conclusion that "scarcely any nation appears to

have felt the dread of approaching senescence, or to have clothed its victims in so many ghastly forms as the Greek writers" bears out Aldous Huxley's dictum in his chapter on Old Age (Texts and Pretexts, p. 141): "No, the Greeks, I repeat, were almost without defence against old age." But Miss Richardson has an imposing list of Greek old men who are known to have kept up their creative work, whether as poet, dramatist, historian, philosopher, scientist, or ruler, to an advanced age. As she remarks, "That poets die young seems to be a popular fallacy." In this connection (p. 224) she makes the astonishing statement that "Sophocles wrote all his plays after he was fifty." Apart from the inherent improbability of this we have inscriptional evidence of his victory in 468 B.C. when he would be still in his twenties. Since we have but seven complete plays of his hundred or so dramas left, it is not strange that we have no record of those written between 468 B.C. and 440 B.C., but it is certain that he had begun his dramatic career, as Euripides had, by the age of twenty-five. Another wrong statement about Sophocles is found on p. 24, where Miss Richardson is arguing that Sophocles and Euripides represent old age as being deprived of reason. She writes "Extreme old age made Oedipus bereft of wit." The reference given for this is O. C. 930-931, a passage from the speech of Theseus in which that hero upbraids Creon for his actions against Oedipus and tells Creon that he is a foolish old man. Moreover, the magnificent old Oedipus rages, but does not "dodder," though Miss Richardson thinks that Sophocles has made in Oedipus at Colonus the picture of a "doddering, desiccating senility." There is nothing senile in the spirit of Oedipus, but a daemonic grandeur, which is prophetic of the god-sent doom that awaits him.

The book, covering as it does the treatment of its subject in literature and art from the Homeric period through the Hellenistic, evinces a high degree of scholarly assiduity on the part of the author. It gives in convenient and well-arranged form all the literary evidence. The illustrations of old age depicted on vases and their discussion form a delightful part of the work. Miss Richardson has completed a fine study that will prove of value to many students and teachers.

Among the "recompenses which the Greeks found in the autumn days," Miss Richardson counts conversation, the intellectual life, parental affection, and filial devotion, friendship with the

young, and the wisdom which comes with age (Chapter II). In all the "defences against age" which she catalogues, she quotes none so beautiful in its expression as that which Aldous Huxley has written at the end of his chapter on Old Age.

GRACE H. MACURDY

VASSAR COLLEGE

FRÜHGALLISCHE RELIEFGEFÄSSE VOM RHEIN  
(Materialien zur römisch-germanischen Keramik 6), by August Oxé. Pp. 41, pls. 18.  
Frankfurt am Main, 1934. RM. 6.

The present study includes seventy items showing decoration which parallels that of the Arretine ware shown in Dr. Oxé's *Arretinische Reliefgefässe vom Rhein*, Heft 5 in the same series, where it was originally intended for inclusion. The purpose of this supplementary fascicle explains the omission of much material that might otherwise have appeared, and the inclusion of only four signed pieces in the group. The scheme of the work is much the same as before; an introductory discussion followed by a detailed description of individual sherds. The plates again consist of photographic and free-hand illustrations of the material, and the indexes are characteristically exhaustive.

The author brings his customary suggestive and authoritative observations to the new problems peculiar to early Gaulish ceramics, including potters' signatures, decoration, vase-forms and especially chronology. A particularly unexpected and brilliant conjecture proposes that the Gallic uprisings of A.D. 21 were related to the prompt commencement of pottery exportation from South Gaul to the north and east, and the migration of the industry from Montans to La Graufesenque.

The most interesting individual vase is a local attempt to represent the legend of Oedipus, a composition for which no Arretine or Gaulish prototype is attested. The anonymous potter has assembled an incredible mixture of motives partly plagiarized from M. Perennius Tigranus and partly of native tradition and execution, so stylized—and amorphous—that it inevitably suggests our own contemporary schools of art. Dr. Oxé well places this amazing piece in a unique place among Gaulish adaptations of Roman relief.

Hardly less interesting as an outcropping of Gaulish feeling is the appearance of a non-skeletal ox-head on No. 14. Space does not permit the

presentation of full evidence, but it is proper to add that this essentially Greek ox-head appears but early and rarely at Rome; in the Imperial period bare boucrania were standard for altars, sarcophagi, friezes, and the Arretine ware<sup>1</sup> of M. Perennius Tigranus.<sup>2</sup> Nearer at hand the Gaulish potter had contemporary sculptured models in the same tradition,<sup>3</sup> while the numerous Gaulish examples of the complete ox-head, which occurs chiefly on taurobolic altars and architectural metopes of inferior provincial execution, are datable as a whole to the second century or later.<sup>4</sup> Both ox-heads and boucrania are altogether lacking from Knorr's *Terra-Sigillata des 1. Jahrhunderts*. Thus, in this, ox-head No. 14 offers a distinct break from Roman decorative traditions and perhaps a foreshadowing of a later Gaulish sculptural convention.

Ubiquitous references in the present fascicule show its close relation to its predecessor and to Knorr's publication. Other literature is also fully treated, but Oswald-Pryce, *Roman London* (*Archaeologia* LXXVIII), 39 should certainly be noted *à propos* of Oxé's No. 2, and certain other London parallels might have received greater stress. Dr. Oxé has contributed material support to the contention regarding a pre-Claudian London. In comparison with the already generous literature on Gaulish *sigillata* and especially Dr. Knorr's thesaurus, Dr. Oxé's book is significant rather for its thoroughness of treatment and excellence of illustration than for its wealth of material. Within its scope it is a unit on which the sponsoring Kommission and the author deserve congratulation as a worthy sequel to *Arretinische Reliefgefässe*.

HOWARD COMFORT

HAVERFORD COLLEGE

A PAPYRUS ROLL IN THE PRINCETON COLLECTION, by Edmund H. Kase, Jr. (Princeton diss.), 1933; 36 pp. \$2.50 (bound); obtainable from Stechert, New York.

P. Princeton Kase, as it will be christened, makes a brief and helpful contribution to the

<sup>1</sup> I know of but one possible exception, Chase, *Loeb Coll.* 242, which seems to be a mixture of traditions.

<sup>2</sup> Chase, *op. cit.*, 237, shows an isolated case signed by C. Annus.

<sup>3</sup> Espérandieu, *Recueil*, shows fine specimens of the first century from Vienne, Nîmes, Narbonne, etc.

<sup>4</sup> Espérandieu, *op. cit.*

historical papyrology of the early fourth century. There is presented with commentary a fifteen-column roll of receipts for grain and money, dated A.D. 310-324. In two supplementary studies the author shows that the first fifteen-year indiction cycle commenced in A.D. 312 and that the consulship of the Licinii occurred in A.D. 321.

HOWARD COMFORT

HAVERFORD COLLEGE

HISTORY OF THE STATE OF NEW YORK. Alexander C. Flick, Editor. New York: Columbia University Press, Vol. I, Introduction and Parts I-IV.

This new history of the State of New York, a work of collective scholarship published under the auspices of the New York State Historical Society by the Columbia University Press, begins with a survey of the geological history of the area by Chris A. Hartnagel and a rather detailed study of the local Indian tribes under three headings by Arthur C. Parker. Both treatises are written in a clear and entertaining style.

Arthur Parker's handling of historical sequences in New York archaeology and ethnology is definite enough on the stratigraphic side. He dates the Iroquois intrusion at about 1300, but he is perhaps too generous in his chronological suggestions for the lower levels. He allows "several thousands of years" for a single type of remains and "many thousands of years" for the aggregate age of his Algonkian I, II and III. His Algonkian IV is practically contemporaneous with the Iroquois occupation, since it began about 1250 and lasted down to the coming of the whites, and he suggests, moreover, that Algonkian III may have begun about 950 A.D. This leaves most of the total period for an unprogressive nomadic life in Algonkian I, for if Algonkian II had pottery it can hardly be explained in any other fashion than as a margin phase of agriculture already established among the mound-builders.

The truth is that data for chronological estimates do not exist in the local records and reference must be had to general evidence on the peopling of America checked by specific evidence in far distant parts of the New World. As regards the general evidence it is a human, or at least an American, trait to lend attentive ears to suggestions of glamorous antiquity. But there are serious arguments against the carefree use of millennia. With the absence of a truly Palaeolithic or even Mesolithic culture in the New World and the probability that the Indian dribbled into Alaska

from Siberia with polished stone tools, we cannot fairly ascribe a greater antiquity for man in America than is given for the beginnings of Neolithic culture in the continent of its origin, or, say, 5000 B.C. Practically, then, the archaeologist is not called upon for 7000 years of human existence in the State of New York, since a fraction of that amount will serve all logical purposes.

The stages of Indian culture in New York are given by Parker as follows:

*Algonkian I*

A nomadic occupation without agriculture or pottery making, stone tools being coarse and bone rarely preserved.

*Algonkian II*

A semi-sedentary stage of more highly cultured people with crude pottery, varied tools of stone and much bone and antler.

*Algonkian III*

Village life supported by agriculture: at first the villages were without fortifications but later

stockades were built. Developments are seen in the decorations on pottery. This stage ended about 1300 A.D.

*Algonkian IV*

From the arrival of the Lenape group of Algonquian tribes until the coming of the white man: this period is semi-historic, thanks to the pictographic record of the Walum Olum.

Parker dates the formation of the Iroquois League under the inspiration of Hiawatha at about 1570, stating that this event had been preceded by devastating warfare and that it was followed by the successful breaking of the power of the Hurons in 1648, of the Neutrals in 1651 and of the Eries in 1654.

Probably no scholar of today is better qualified than Parker to give a summary of the relations of environment to Indian life in this area or to interpret the traditions, myths and ceremonies. It is gratifying to find a history of New York based on such a suitable preamble as is furnished by these essays.

BROOKLYN MUSEUM

HERBERT J. SPINDEN